MESA, CAÑON AND PUEBLO

CHARLES F. LUMMIS

SWH

Albion College
Library

F
786
.L935

16188

F 161880
786
.L935

Lummis
Mesa, cañyon and pueblo.

5 26 ANE GREENAWALT

WITHDRAWN
FROM
ALBION COLLEGE LIBRARY

STOCKWELL-MUDD LIBRARIES
F786.L935
Mesa, canon and pueblo
3 5044 00296 3962

Albion
Susanna Wesley Hall
College

MESA, CAÑON AND PUEBLO

MESA, CAÑON AND PUEBLO

A MATCHLESS NAVAJO BLANKET.

MESA, CAÑON AND PUEBLO

OUR WONDERLAND OF THE SOUTHWEST—
ITS MARVELS OF NATURE—ITS PAGEANT
OF THE EARTH BUILDING—ITS STRANGE
PEOPLES—ITS CENTURIED ROMANCE

BY

CHARLES F. LUMMIS

AUTHOR OF "SOME STRANGE CORNERS OF OUR COUNTRY," "PUEBLO INDIAN FOLK STORIES," "THE LAND OF POCO TIEMPO," "A NEW MEXICO DAVID," "THE SPANISH PIONEERS," "A TRAMP ACROSS THE CONTINENT," ETC., ETC.

ILLUSTRATED WITH NEARLY
100 RARE PHOTOGRAPHS

THE CENTURY CO.
NEW YORK AND LONDON

Copyright, 1925, by
THE CENTURY CO.

F
786
.L935

121880

Printed in U. S. A.

To My Children
BERTHA and TURBESÉ
QUIMU and KEITH,

EACH OF WHOM HAS SOMETIMES SHARED MY
EXPLORATION IN THIS WONDER LAND

FOREWORD

For nearly forty years I have been writing in and of the million square miles which include New Mexico, Arizona, Southern California, and adjoining parts of Colorado, Utah, Texas, and Northern Mexico—an area to which I was first to apply, over a third of a century ago, the generic christening by which it is now commonly known—THE SOUTHWEST. My books were the first to make widely known most of the marvels of that incomparable Wonder Land, which I began to explore eagerly on my "Tramp Across the Continent" in 1884. Through the decades since, I have made the Southwest a study, not only by exploration but in documentary research—and hope never to know it all!

In 1892 I printed in "St. Nicholas," and then in amplified book form, "Some Strange Corners of Our Country," illustrated with forty of the fine wood-engravings for which The Century Co. was famous. The book has sold as a standard for over thirty years, and has led innumerable thousands

to an interest in the Southwest. It is fair to add that none of its statements have ever been found inaccurate.

But in a third of a century many things have changed even in the Old Southwest—and not least of them my own fund of knowledge. So, when the demand became strong for a "new edition," I undertook to revise the useful old volume. But it very soon became clear to me that it was no matter of revision, but of a new book, based on the old, and including all its valuable material, but entirely rewriting that, and adding a far larger volume of entirely new matter. This I have done. It is a new book, with a new name, new form, new illustrations—and more than twice as many of them; this time by direct half-tones from rare and extraordinary photographs. The old book was the pioneer in its field; I hope the new one may serve as a standard still better and for as long. The "Strange Corners" are still as wonderful, but no longer so unknown. My old slogan of "See America First" is no longer so unfashionable as when I originated it thirty-six years ago. The enormous increase in the transcontinental travel, not only by train but now also by automobile, with its greater facility for digressing from the main line to visit wonders at the side, makes more necessary than ever before a competent and authoritative book on the marvellous picturesque-

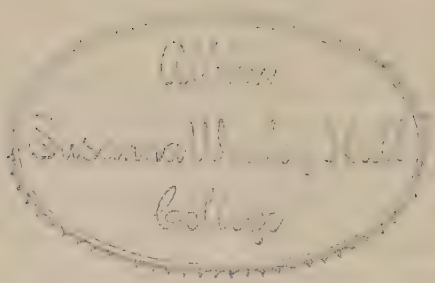
ness and Romance of the Southwest, the Wonder Land of Mesa, Cañon, and Pueblo.[1]

Probably in the last thirty-eight years I have made more five-by-eight negatives of the Southwest than any one else. I could lavishly illustrate a score of volumes like this from my own photographs. But I care less—and the reader not at all—whether the illustration is by me or by another, so that it shall be the best. I did not always get the best picture of everything—and I am glad to make room for my betters. My idea of illustrations in a book like this is that they should really ILLUSTRATE—that they answer the questions the text provokes.

In the old days, among the Indians, I was largely the "ice-breaker"—and long, difficult, and sometimes dangerous years I had, to "break" them to the camera. They believed that the photograph was taken not only of them, but *from* them; and that, with enough prints, they would waste away to nothingness. Also, beginning so long ago, I photographed many customs, types, and monuments which no longer exist, and I carry more than one scar in memory of what the old Dallmeyer and I have together seen and saved.

Chas. F. Lummis

[1] Pronounced MAY-sa, CAN-yon, and PWEB-lo.



CONTENTS

CHAPTER		PAGE
I	"See America First"	3
II	The Grand Cañon of Arizona	20
III	The Grand Cañon, *Continued*	34
IV	Our Own Sahara	50
V	Death Valley	63
VI	Our "Ships of the Desert"	80
VII	The Strangest Trap in the World	90
VIII	A River Overhead	100
IX	The Oldest Trees in the World	107
X	The Self-Crucifiers	122
XI	The Greatest Natural Bridges	129
XII	The Dance of the Deadly Snakes	144
XIII	Begging the Bear's Pardon	159
XIV	The King of Blankets	168
XV	Acoma, the City of the Sky	183
XVI	The Enchanted Mesa	213
XVII	The Rivers of Stone	230
XVIII	The First Americans	250
XIX	Homes That Were Forts	272
XX	"Montezuma's Well and Castle"	294
XXI	An Odd People at Home	307
XXII	The Wonder-Workers	316

CONTENTS

CHAPTER		PAGE
XXIII	The Blind Hunters	331
XXIV	An Older Salem	347
XXV	Doctoring the Year	355
XXVI	The Dance of the Sacred Bark	370
XXVII	The Praying Smoke	380
XXVIII	"Finishing" an Indian Boy	389
XXIX	A Saint in Court	401
XXX	The Jemez Plateau	415
XXXI	Yankees of the Southwest	430
XXXII	More of the Jemez Plateau	448
XXXIII	The Stone Autograph-Album	460
	Appendix	484

LIST OF ILLUSTRATIONS

	FACING PAGE
A Matchless Navajo Blanket	*Frontispiece*
A Castle on the Rhine	12
Thomas Moran at 85½ Years	22
A Detail of the Grand Cañon	26
Clouds at Play in the Grand Cañon	29
The Rio Colorado	39
"Iceboating" on a Dead Lake of the Mojave Desert .	79
Greek George, a Driver of Jeff Davis' Camels . . .	82
Mojave Indians at Home	82
The Painted Desert	82
The Pleistocene Camel	96
The Unique Saber-tooth Tiger	96
Imperial Elephant	96
Map of Routes to Petrified Forest, Arizona	109
Chips Off the Old Block	110
Sections of Agate Tree-trunks	118
The Petrified Log Bridge	118
Characteristic Fracture of Petrified Trees	118
The Penitentes' Procession, San Mateo, N. M., 1888 .	125
The Penitentes' Crucifixion, San Mateo, N. M., 1888 .	127
Not-Se-Lid, "The Rainbow" Natural Bridge . . .	129
The "Mammoth" Natural Bridge	134
The "Mammoth" Natural Bridge, Within	136
The Eagle Fetish	142
Moqui, the "First Mesa" from the North	145

LIST OF ILLUSTRATIONS

FACING PAGE

A Moqui Madonna 148
Antelope Man and Snake Man 150
The Moqui Snake Dance as It Was 154
A Moqui Coiffure 157
Acoma—The Horse Trail 183
Acoma, Looking Out from the North Trail 188
All Acoma, from the Church Roof 195
Acoma Church and Built-up Graveyard 200
The Acoma Water Supply 200
Detail of Pueblo Terraced Architecture 200
Acoma—The Patronal Feast of San Estéban . . . 206
Prehistoric Trails 209
Martin Valle, Seven Times Governor of Acoma . . . 214
Katzimo, the Enchanted Mesa, from Northwest . . . 219
David Starr Jordan and Party on Summit of the Enchanted Mesa 225
Some Proofs of Habitation 227
Hauling My Party Up Katzimo 229
"Mr. Punch" 229
Map of Katzimo 229
A Pueblo Darby and Joan 252
"The Man with the Hoe" 256
A Pueblo Patriarch and the Old Carreta 261
"Viejo Chaves," a Pueblo Ben Franklin 264
Musico, Queres Silversmith 268
Diego, Tigua Youth 268
The Pueblo Waterworks 268
Three Young Isleteños in 1890 271
North and South Plazas of "Balcony House" . . . 274
In Cañon de Chelly 283
The Famous "White House," Cañon de Chelly . . . 283

LIST OF ILLUSTRATIONS

FACING PAGE

Part of North Wall, Pueblo Bonito 285
The "Cliff Palace," Close 288
The "Cliff Palace," Showing Natural Cave Which Shelters It 288
Talus Pueblo, Rito de los Frijoles 293
Trail to "First Mesa," Moqui 293
"Montezuma's Well" 299
"Montezuma's Castle" 304
The Green Corn Dance 307
Pueblo Interior, Isleta 309
Taos—The Ceremonial Runners 312
Isleta—Combing Friend Husband 312
Pueblo Woman Weaving a Belt 314
Race of the Cacique 314
Pueblo Indians 314
Acoma Runners of the Ceremonial "Whib" Race . . 335
Modern Pueblo Tinajas (of 50 years ago) 369
Pueblo Woman Firing Pottery 384
"The Cathedral of the Desert," Santa Fé 415
Ruins of the Great Church of Tabirá, "Gran Quivira" . 422
Bandelier at Santo Domingo 422
Tyuonyi—The Rito de los Frijoles 426
An Ancient Shrine of the Rito People 432
Caves of the Eagle Clan 432
Cliff and Caves of Pu-Yé 432
The Old Indian Basketry Bridge, Pueblo of San Felipe . 436
Ruins of Church at Giú-se-wa, 1617 436
Ambrosio Abeita, Pueblo Governor 446
The 500-Foot Soda Dam, Jemez Cañon 455
El Morro—"Inscription Rock" 464

LIST OF ILLUSTRATIONS

FACING PAGE

Oñate's Inscription on His March Back from "The South Sea," in 1605 464
Ramon Paez Hurtado 472
Silva Nieto's Second Entry 472
Diego Luzero de Godoy 476
Juan Gonzales, 1629 476
Juan de Archuleta, Diego Martin Barba and Agostyn de Ynojos 476
The Famous "Lujan Inscription" 479
Silva Nieto's First Entry 480
The First Bishop in New Mexico 480
Map of Southwest, Indicating Chief Localities Mentioned, with Rail and Main Automobile Roads . . 488

MESA, CAÑON AND PUEBLO

MESA, CAÑON AND PUEBLO

CHAPTER I

"SEE AMERICA FIRST"

OUR years come insensibly upon us, unmeasured, not half realized, till, on a sudden, we notice that the children have grown up! "It seems only yesterday"—but to-day, children no longer, they stand tall as we are; aye, or perhaps tower above our gray heads. And their talk is no more a prattle—they are speaking of a changed world, and maybe of babies of their own.

My boys have brought it back to me clearly enough—each a head taller than dad. But I can measure it, too, by many much older sons of mine —the Things I have Thought and Done. Most of these are little fellows still—they never did grow up much. But some are much bigger than their father.

It was I who originated this slogan: "See America First," and I gave good reason for the seeing.

That was a third of a century ago; and it was truly enough, and in more ways than one, "a voice crying in the wilderness." I was living and writing in old New Mexico, still part, in the popular idea, of the "Great American Desert." Geographies not so very long before still so marked the million square miles between Kansas and California. It was not a third of a century after New Mexico was cut in half by Congress (in 1856) and Arizona created out of its western portion. Two transcontinental railroads traversed its mountain passes and sandy wastes; but they were only "to get to California." A score of strange peoples, picturesque, romantic, mysterious, dwelt there, in little "cities" of quaint architecture and quainter customs; and among them and about them, for three hundred and fifty years already, there had labored and studied and written the descendants of the men who discovered and explored and colonized and civilized two thirds of the Americas, long before Plymouth Rock. And there, too, was a very host of the most notable sceneries on this planet.

But no one seemed to know anything about all that; and it took a long time to get any one to care. The call fell for long on heedless ears. "See America First?" Why? It was not "fashionable!" We are "creatures of habit"—which is a polite way of saying that we are intellectually

lazy. To do as we always have done, and think as we have always thought—and both because other people have so thought and done—is of course the inevitable thing in the average of any life. The most "original" person does not differ from others in one act in ten thousand, any more than the most ingrown liar could lie a thousandth part of the time if he tried. Our ideas and ideals are mostly traditional, by necessity. We cannot each one master, by independent research, all geographies, all literatures, all art, all history. We do well if we learn a little of what has been appraised for us by those who set our fashions of learning as others do of our clothing. We would be lucky if our schoolmasters themselves were never provincial, insular, mentally timid, and comfortably blind. It is little credit to our teachers, and less to us, that we are to this very day so ignorant of the early history of America and of its wonders; that we know so little and have so little pride of a story unsurpassed in the annals of heroism and romance; of scenery whose grandeur and picturesqueness challenge the world; of a vast and incomparable treasure-house of artistic, pictorial, dramatic humanities which in any other land would have been for centuries famous in literature and on canvas. We would know all about these wonders if they were in any other land than our own. We would have heard of them

and read of them from childhood onward, and would aspire to visit them at some fortunate time when we could "travel." But we may as well confess that there is more than a little snobbishness in our notions of "Travel." It is almost universally understood to mean journeying "abroad" —as though there were no such thing as "travel" possible in our own richer half of the globe! There is an undisguised "superiority" in speaking of one's tours in Europe—even if they be of the most stereotyped and "Cookie" sort; following a scheduled path from hotel to hotel and monument to monument with stereotyped guides, and no real insight of the people or the country's heart. Doubtless all of us have had abundant opportunity to observe how little genuine benefit this "Smatter-travel" confers on its votaries—beyond material for ostentatious conversation; how far and how long and expensively one may travel in this sheep-like fashion without any genuine gain in real culture, or broadening, or true sense of the Brotherhood of Man and the vast Drama of the Earth-building.

Within the last thirty years there has been a great change in this attitude of Americans toward America; a change beginning with a very little nucleus, but progressing more and more rapidly, as the snowball rolling down hill. It is one of the deepest satisfactions of my life to know

that I have materially helped in making the Southwest known and interesting to my countrymen. It was indeed I who first gave that name, "The Southwest," to the enormous area roughly including New Mexico and Arizona with parts of the regions next adjacent on all sides. The unknown corners and lonely trails I pried into and unraveled with plodding bronco in the Eighties are now buzzed upon with automobiles—many of them taking the transcontinental tour and turning aside here and again to view the "Strange Corners" which are still strange enough, though no longer unknown. Possibly I would not hear from the other side, anyhow; but I have yet to learn of any one disappointed in his visit to these notable places.

You will pardon a mild emphasis on certain prior right, as in these phrases: "See America First," and "The Southwest." That region is big and wonderful enough for all to write of and paint and explore, and no one has a copyright on it. The true student welcomes, more gladly than publisher or public, every sincere new worker in his field, and has no thought of "poachers." But for the self-seeking charlatan, who neither studies nor learns, nor brings to light new knowledge, but calmly appropriates the research, the ideas, and even the characteristic language of others, and struts in borrowed plumes, there is no long wel-

come anywhere. And there have been one or two such in this field, who, securing an order for "a book on the Southwest," apparently immure themselves with my old volumes, and Bancroft for historical hints, and put our "dejected members" through their grinder—adding no meat but a good deal of "cereal."

But we are not yet in any immediate danger of being a nation familiar with and proud of its heritage of nature and antiquity. The snobbish tradition is still dominant—in travel even as in art and letters. Our artists must go abroad and get a European diploma before they can hope for large recognition. Our musicians suffer from the same provincial spirit—the timidity of ignorance; the fear to admire anything on its merits, unless some supposed authority declares it admirable. It is another phase of "the prophet without honor in his own country." Not long ago the largest women's club in California was disappointed by the sickness of the programed artist; and in great distress sought a famous impressario for some one to fill the program. "Luckily," said he, "Maestro Blank, the greatest pianist in the world, has just arrived from New York. I think I could get him for you." "Maestro Blank? Why, he *lives* here! We could not use *him!*" As a matter of fact, this undisputed master had come to the city a few months before and taken up his resi-

dence. And of course if he "lived here" that settled him as a pianist! This is literally true; and those are very able and amiable ladies. They simply reflected a snobbishness which colorates our life and ideals in many ways. Other lands have an honorable pride in knowing that which is notable in their scenery and their history, and in honoring their people of genius; but we, when we have pointed to our marvelous growth in population and wealth and material achievement, are very largely done with what we can say for our country; and hasten abroad in quest of sights not a tenth part so wonderful as a thousand we have at home and never dream of. It is true that other nations are older, and have grown up to pride and tradition in something besides matters of money and machinery. But our youth and our achievements are a poor excuse for this unpatriotic semi-contempt for those marvels of our country which are due to God and not to us. There are many parts of America—even of the United States—of which too many Americans know no more than they do of Inner Africa, and are less interested to learn. My hope is growing that I shall live to see Americans proud of knowing America, and ashamed not to know it. If we would cease to depend so much upon other countries for our standards of life and thought, we would have taken the first step toward an

Americanism which would certainly be becoming and patriotic. We read innumerably of the wonders of foreign lands; but very few writers—and still fewer reliable ones—tell us of the marvelous secrets of our own. Every intelligent youth knows that there are boomerang throwers in Australia; but how many are aware that there are thousands of aborigines in the United States just as expert with the flying club as are the bushmen? All have read of the astounding feats of the jugglers of India; but how many know of the extraordinary jugglers among our own Indians? The curious Passion Play of Oberammergau is in the knowledge of nearly every one; but relatively few know the startling fact that every year staged in the United States, until very recently, an infinitely more dramatic Passion *Reality*—a flesh-and-blood crucifixion—wherein an ignorant fanatic represents in very fact the death of the Savior. How many Americans would think to say, when some traveler recounted the exploits of the world-famous snake-charmers of the Orient, "Why, yes, we have tribes of Indians in this country whose trained charmers handle the deadliest snakes with impunity, and with them perform the most extraordinary of ceremonials," and go on to tell the astonishing rituals of the Moqui Snake-dance? How many realize that we have Indian communities dwelling in huge six-

story tenements of their own building, as they did before Columbus was born? How many are aware that the last witch in the United States was not hanged in cruel old Salem (hanged, please; for the popular tradition that the Puritans *burned* witches is entirely untrue; they just hanged them), but that there is still within our borders a vast domain wherein witchcraft is as fully believed in as it was in Pilgrim days; and where somebody is executed officially (though secretly) every year for the strange crime of "being a witch"?

There are thousands of other strange things on our own soil that we know not of. They are changing fast; they have changed very greatly since I began to write about them, thirty-eight years ago. But our Southwest is still full of customs as strange and interesting as any with which we have become traditionally familiar from the uttermost parts of the earth.

As to our scenery, we are much better informed than as to the human interest in our remote communities; yet every year tens of thousands of Americans flock to Europe to see scenery vastly inferior to our own upon which they have never looked. We say there are "no antiquities in this country," and no "ruins"—and cross the ocean to admire crumbling piles far less interesting than are in America.

In another book, "The Spanish Pioneers," I have given several chapters to the original Winning of the Southwest—the romance of unparalleled march and exploration, heroic conquest and colonization, devoted evangelization. No other portion of the United States has anything remotely comparable to the Romance of the Southwest, in centuries, danger, hardship, sacrifice, heroism, and human interest. The Franciscan Missionaries began there in 1540; and before our Pilgrim Fathers saw Plymouth Rock these gray-robed friars had built a score of great stone churches for the Indians here in New Mexico, fifteen hundred miles inland. When any one tells you "we have no ruins in America," you are safe to tell them that in America are nobler ruins than in Europe, and vastly more of them. Bid them bring forth the peers of the Sacsahuaman, of Palenque, of Chichen-Itza, of Quirigua, of Uxmal, of the Cliff Palace. Why, Alvarado's one venerable capital of Antigua de Guatemala would milepost the Rhine from Bingen to Bonn with its noble ruined temples!

In New Mexico alone, to this day, the ruins of the old Franciscan churches and monasteries at Tabirá, Abó, Cuaraí, Pecos, Giúsewa, San Felipe, Santa Clara, Taos, and Acoma (still used, though the monastery is partly in ruins)—these nine temples, if they were in Europe, would be each

Photo by Chas. F. Lummis

A CASTLE ON THE RHINE?

No—an American Ruin; the Franciscan Church at Abó, N. M., deserted 1670. See Chap. XXXII.

a household word and a pilgrimage. We Americans would know all about them, superficially. A hundred years before our nation was born these Spanish Franciscans had built fifty churches for the Indians in the wilderness of New Mexico. As for the innumerable Cliff-dweller-Pueblo ruins, Europe has nothing to compare with them.

We read of famous passes and gorges abroad and are thrilled with their story, forgetting that in a desert corner of the United States is the greatest natural wonder of the world—a cañon into which all the world's *famous* gorges could be tossed and lost. And not one American in a thousand has ever looked upon its awful grandeur.

Of course we know the Sahara—for that is not American; but we do not often hear of any one who is familiar with an American desert as absolute and as fearful—and incomparably more picturesque. We hear much of our giant redwoods in California—the hugest trees in the world, and the oldest living things—but how many know of a petrified forest of agate covering thousands of acres? There is one such in the United States, and a great many smaller ones. Do you know that in one State alone we have the ruins of more than fifteen hundred stone "cities" as old as Columbus, and many of them far older? Have you heard of prehistoric towns here whose

houses are three-story caves, hewn from the solid rock?

If such things were in England, or Germany, or Italy, or Asia Minor, or Egypt, there would be countless books and guides overflowing with information about them; and knowledge of them, by visit or at least by reading, would be reckoned as part of any liberal education. Is n't it somewhat a shame that we Americans know so little of these and so many other wonders of America?

There is only half-truth in the proverb, "It is never too late to learn." As we grow older, we "learn" many things after a fashion, and account ourselves extremely wise. But that "wisdom" is only the skin of life, so to say, and what we learn in youth is the real bone and blood. I would rather interest one of my young countrymen than a thousand of the older ones; and if I could induce him to resolve that whatever else he learned he would learn all he could of his own country, I would be very happy. And of course by "young" I mean no servile respect to the calendar. Out of the many thousands who have told me of their joy in following these trails, many have been "young" only inside; and I have had as much pleasure in helping a little woman of seventy up the cliffs as in equally helping her nimble and generous grandchildren.

It is so easy now to see the whole Southwest

Wonder Land (another name I long ago took the liberty to coin) that there is no excuse for neglecting it. I would not venture to tell any one that it was his or her patriotic duty to see the glories of America; for it is useless to define patriotism to such as need the definition. The generous and the young-hearted, those who have faith and imagination, and the stir of adventure in their blood, are the ones to feel the Americanism of knowing America. But the message that is intelligible to all classes is that it is—fun! That it is inspiring, interesting, fascinating—and none the less so because it leaves you wiser and better for the enjoyment.

This is particularly true of this our Southwest. Doubtless there is nowhere else on earth an equal area so rich in the variety and charm and multitude of wonders, scenic and human. The geology, under uplift, upheaval, and erosion, makes that region a class by itself in physical features.

"Funny"—but the first popular writer to know and love and tell us about our American Southwest was not an American at all, but a cocky, dapper little rover-poet-soldier from the North of Ireland, Captain Mayne Reid. And to this day, no man has made that wonderful land so fascinating as this fighting bantam Irishman made it, seventy years ago. Since his time, story-

writing has become epidemic. We had the Oliver Optic print-factories to reel off calico stories by the yard; we have had many writers of juveniles of genuine merit. But not one of them that wrote for boys had ever such an audience as Mayne Reid had. Boys who were boys fifty or sixty years ago know that. If the boys of to-day know less of Mayne Reid, why, so much the worse for them! A too fluent writer, he was yet a companion whose enthusiasm was contagious and instructive. He had a very genius for accurate observation and logical deduction, a rare instinct for the truth, and a genuine love of nature. His adult romances were too sensational for our modern taste, though very true to life and invariably without suggestiveness; but his "boys' novels" are far and away the best ever written about our own West. They teach love of nature as no others do; they are clean and magnificent, and so exciting that no sane boy could fail to kindle to them. "Funny" again—no naturalist, geographer, or historian who has written of this field has better withstood the test of time. In these seventy years, no one has ever been able to pick a serious flaw in Mayne Reid's history, geography, ethnology, or zoölogy—in fact, his local color. How remarkable this record is can be realized only by those who have followed the literature of this field, and know what in the same period has befallen many writers—even to Prescott, whose

marvelous historical romances on the conquest of Mexico had their iridescent bubble pricked by Lewis H. Morgan so long ago as 1866.

Landing in New Orleans in 1840, this stripling of twenty-two graduated from college to—the wilderness. Starting on an old Louisiana plantation as storekeeper, "nigger-driver," tutor, school-teacher, he learned the planter's life in its palmy days. Then he adventured forth, into the Great American Desert with traders and trappers and hunters, to the buffalo plains and up the Red River, the Missouri, and the Platte. In five years of this roving he got to know and love the great West in its wild and splendid unspoiled days. His later experience in Cincinnati, Pittsburg, Philadelphia, Newport, and elsewhere, as poet, playwright, correspondent, editor, developed his exotic literary gift. So did his two years as next-door neighbor and intimate friend of Edgar Allen Poe, of whom he became the fiery champion against the ghoulish Griswold. When the war with Mexico broke out, in 1846, he got a commission as second lieutenant in the first volunteer regiment raised in New York, and served throughout the war with conspicuous gallantry. He was the hero of the storming of Chapultepec, where he fell upon the very parapet with a wound from which he never fully recovered. General Scott praised him in general orders for conspicuous gallantry, and he won the friendship and commen-

dation of General Phil Kearney. In 1849 he sailed from New York to offer his sword to Hungary, whose vain struggle for freedom stirred our fathers. The revolution failed, but Reid became the lifelong and intimate friend of Kossuth. He settled down in England to the writing of books about the wonderful new lands he had learned to love so well.

His first romance, "The Rifle Rangers," was written at the house of his stanch friend, Donn Piatt, in Ohio, but could find no publisher in this country. It was issued in London in 1850 and became an instant success, going into every language of Europe, and then of course met favor in the United States. Lamartine and Dumas, *père,* were charmed with it. Then came the "Scalp Hunters" in 1851, selling over a million copies in England alone, and translated into many languages. This book of the American trapper, and his first boys' book, "The Desert Home," also in 1851, gave the first popular pictures of the Great American Desert, our own Southwest. He wrote in 1852 "The Boy Hunters," followed by its sequel, "The Young Voyageurs," adding to his great mass of novel and fascinating lore of the West, which opened a new world to readers. He was the first to tell us of the "box cañons," and the mesas, of the quicksands and sandspouts, the piñon-trees and the big-horns, grizzlies, antelope;

and also of the great terraced community houses of the Pueblo Indians. He wrote with the florid diffuseness of that day; he packed his stories with natural history, perhaps for the first time popularly told. For thirty years his works poured forth impetuously—about fifty volumes. In 1867 he returned to this country and made his home in New York and Newport. He was perhaps the first author to get big prices in the United States. "Frank Leslie's" paid him eight thousand dollars for the serial rights of "The Child Wife"; "The Fireside Companion," five thousand dollars for "The Finger of Fate"—perhaps the most worthless of his tales. In 1868 he started a juvenile magazine in New York called "Onward." In fourteen months his health broke down and the magazine died. In 1870 he returned to England and never saw America again; but he never forgot the land he fought for, and in a way "discovered."

He was the pioneer who opened to literature that vast new West of which so many have written since—and so few with his love, insight, accuracy and charm. A few months before his death in 1883, he wrote me a little sadly of "America the land of novelties, as it is that of my love and longings. Alas! my disabled state may hinder me from ever again seeing that far, fair land of the West, so endeared to me by early recollections."

CHAPTER II

THE GRAND CAÑON OF ARIZONA

God's Masterpiece On Earth—A Cosmic Intaglio —Vast Mountain Ranges in Captivity— The Wonder Chasm of the World

I HAVE spoken of the Grand Cañon of Arizona as "a chasm into which all the *famous* gorges of the world could be tossed and lost." But this stupendous size, the mere length and breadth and depth, incomparable as they are among gorges, is only a little part of the wonder of it. It is a little more than three hundred miles long (including Marble Cañon at the north, which is only another name for the up-stream ninety miles). It is ten to fifteen miles wide from rim-rock to rim-rock; and from 6000 to 7000 feet in vertical depth.

The *quebrada* of the Apu-Rimac is a marvel of the Andes, with its vertiginous depths and its suspension-bridge of wild vines. The Grand Cañon of the Arkansas, in Colorado, is a noble little slit in the mountains, traversed by a railroad, therefore well known. The Franconia and White Mountain notches in New Hampshire are beauti-

ful. The Yosemite and Yellowstone cañons surpass the world, each in its way. But if all of these were plucked bodily and hung up by the tail, one by one, on the opposite wall of the Grand Cañon from you, the chances are fifty to one that you could not tell t'other from which, nor any of them from the hundreds of other cañons which rib that vast, vertebrate gorge. If the falls of Niagára [1] were installed in the Grand Cañon between your visits, and you knew it by the newspapers—next time you stood on that dizzy rim-rock you would probably need good field-glasses and much patience before you could locate the cataract, which in its place looks pretty big. If Mount Washington were spaded up bodily by the roots—not from where you see it, but from sea-level—and carefully set down in the Grand Cañon, you probably would not notice it next morning, unless its dull colors distinguished it in that innumerable congress of larger and painted giants.

All this, which is literally true, is a mere trifle of what might be said in trying to fix a standard of comparison for the Grand Cañon. But I fancy there is no standard adjustable to the human mind. You may compare all you will, eloquently and from wide experience, and at last all similes fail. The Grand Cañon is just the Grand Cañon,

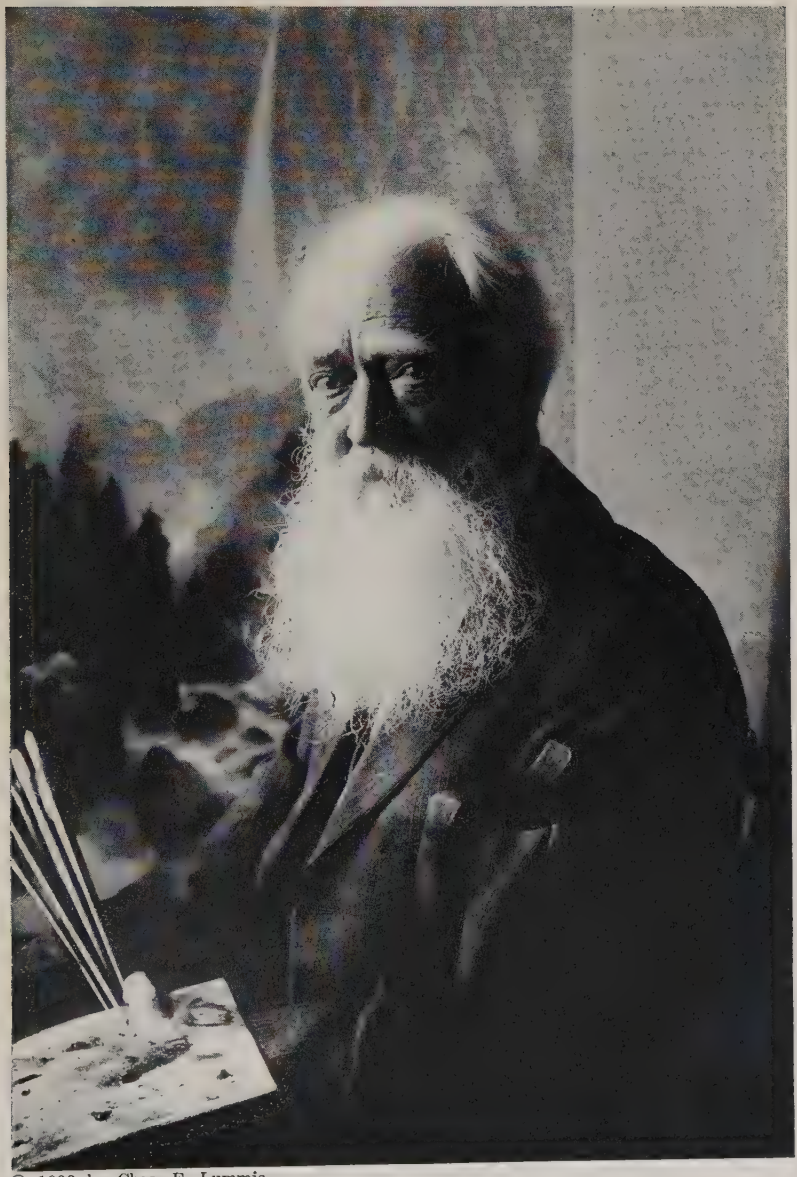
[1] The Indian name is Nee-a-*gah*-rah, a sonorous fitness we quite lose in our flat and ugly Nigh-*agger*-a.

and that is all you can say. I never have seen any one who was prepared for it. I have never seen any one who could grasp it in a week's hard exploration; nor any one, except some rare Philistine, who could even think he had grasped it. I have seen people rave over it; better people struck dumb by it; even strong men who have cried over it; but I have never yet seen the man or woman that *expected* it.

The artist, whether in pigments or in words, realizes how hard it is to envision for others some marvelous handiwork of nature; but I would say rather deliberately that the Grand Cañon of Arizona is the most impossible thing in the world to describe or to paint. Wonderful old Thomas Moran, dean of American painters, whom I met at the cañon thirty-six years ago and have loved ever since, and who at this writing in 1922 is eighty-five years old and painting more marvelously than ever

> The light that never was on sea or land,
> The consecration, and the Poet's dream,

has come nearer to depicting that Titan of chasms than any other man. His noble canvases of the Grand Cañon and the Yellowstone hang in the National Capitol in Washington. But not even his magic brush (with his inseeing eye and deep spirituality behind it) can do more than give a noble suggestion of that whose glories lie beyond



© 1922 by Chas. F. Lummis

THOMAS MORAN, JULY, 1922

At 85½ painting more wonderfully than ever

all palettes save the Almighty's own. In an appendix I quote him concerning the Grand Cañon, and snobbery in art. As for photographs of the Cañon, I think the finest ever made was that by A. J. Baker, reproduced here.

In words, another dear friend of mine for the last thirty years of his life, Charles Dudley Warner, world traveler, artist-minded philosopher, and master of letters, perhaps came nearest the unattainable. He wrote:

> This region is probably the most interesting territory of its size on the globe. At least it is unique. In attempting to convey an idea of it the writer can be assisted by no comparison. . . . The Vermilion Cliffs, the Pink Cliffs, the White Cliffs surpass in fantastic form and brilliant color anything that the imagination conceives possible in nature; and there are dreamy landscapes quite beyond the most exquisite fancies of Claude and of Turner. The region is full of wonders, of beauties, and sublimities that Shelley's imaginings do not match in the "Prometheus Unbound." . . . Human experience has no prototype of this region, and the imagination has never conceived of its forms and colors. It is impossible to convey an adequate idea of it by pen or pencil or brush. . . . The whole magnificence broke upon us. No one could be prepared for it. The scene is one to strike dumb with awe, or to unstring the nerves. . . . It was a shock so novel that the mind, dazed, quite failed to comprehend it. All that we could comprehend was a vast confusion of amphitheaters and strange architectural forms resplendent with color. The

vastness of the view amazed us quite as much as its transcendent beauty. . . . We had come into a new world. . . . This great space is filled with gigantic architectural constructions, with amphitheaters, gorges, precipices, walls of masonry, fortresses, temples mountain size, all brilliant with horizontal lines of color—streaks of solid hues a thousand feet in width—yellows, mingled white and gray, orange, dull red, brown, blue, carmine, green, all blending in the sunlight into one transcendent effusion of splendor. . . . The vast abyss has an atmosphere of its own . . . golden, rosy, gray, brilliant and somber, and playing a thousand fantastic tricks to the vision. . . . Some one said that all that was needed to perfect this scene was a Niagara Falls. I thought what figure a fall 150 feet high and 3000 long would make in this arena. It would need a spy-glass to discover it. An adequate Niagara here should be at least three miles in breadth and fall 2000 feet over one of those walls. And the Yosemite—ah! the lovely Yosemite! Dumped down into this wilderness of gorges and mountains, it would take a guide who knew of its existence a long time to find it. . . . Those who have long and carefully studied the Grand Cañon of the Colorado do not hesitate for a moment to pronounce it by far the most sublime of all earthly spectacles.''

It adds seriously to the scientific wonder and the universal impressiveness of this unparalleled chasm that it is not in some stupendous mountain range, but in a vast, arid, lofty floor of 100,000 square miles—as it were, a crack in the flat roof of the continent. There is no preparation for it. Unless you had been told, you would no more

dream that out yonder amid the pines the flat earth is slashed to its very bowels than you would expect to turn the corner and run into an iceberg on Broadway. With a very ordinary running jump from the spot where you get your first glimpse of the cañon you could go down two thousand feet without touching. It is sudden as a well.

But it is no mere cleft or chasm or simple gorge or cañon—it *contains* unnumbered hundreds of these, within its incomprehensible mazes. It is a terrific trough, 6000 to 7000 feet deep, ten to fifteen miles wide, more than three hundred miles long, peopled with hundreds of peaks taller than any mountain east of the Rockies—yet not one of them with its head so high as your foot upon the rim—and all ablaze with such color as no Eastern or European landscape ever knew, even in its alpenglow. It is a condensed river system, with this tremendous mountain system countersunk and imprisoned in its deep-cut channels. If you take a big palmate leaf, and look at its reticulations, taking the midrib for the main channel of the river (much straightened) and the network from it for little streams, each with its own tributaries, you begin to get a hint of the ground-plan; but no hint at all of the cross-erosion of winds and rains and frosts which have carved out from the cliffs along the river and its tributaries vast out-

standing and upstanding shapes, like islands in this amethystine gulf of ether, and miles from its glowing "shore." And as you sit upon the brink the divine scene-shifters give you a new cañon every hour. With each degree of the sun's course the great countersunk mountains we have been watching fade away, and new ones, as terrific, are carven by the westering shadows. It is like a dissection of the whole cosmogony. And the purple shadows, the dazzling lights, the thunder-storms and snow-storms, the clouds and the rain-bows that shift and drift in that subterranean arena below your feet! And amid those enchanted towers and castles which the vastness of the scale leads you to call "rocks," but which are in fact as big above the river-bed as the Rockies above Denver, and bigger than Mount Washington from Fabyans or the Glen!

Ten thousand pens have "described at" this indescribable, in vain. It is not I who shall think to tell it. If only I may prick the consciousness of some who are missing this supreme experience, if I may find some comparison or simile which, though inadequate, shall provoke investigation, I shall have done my part. And my superlatives shall not be denied by any idle visitor who condescends for a day to peer over the Grand Cañon from the comfortable hotel on its rim. The largest words I know are only knee-high to the fact; and

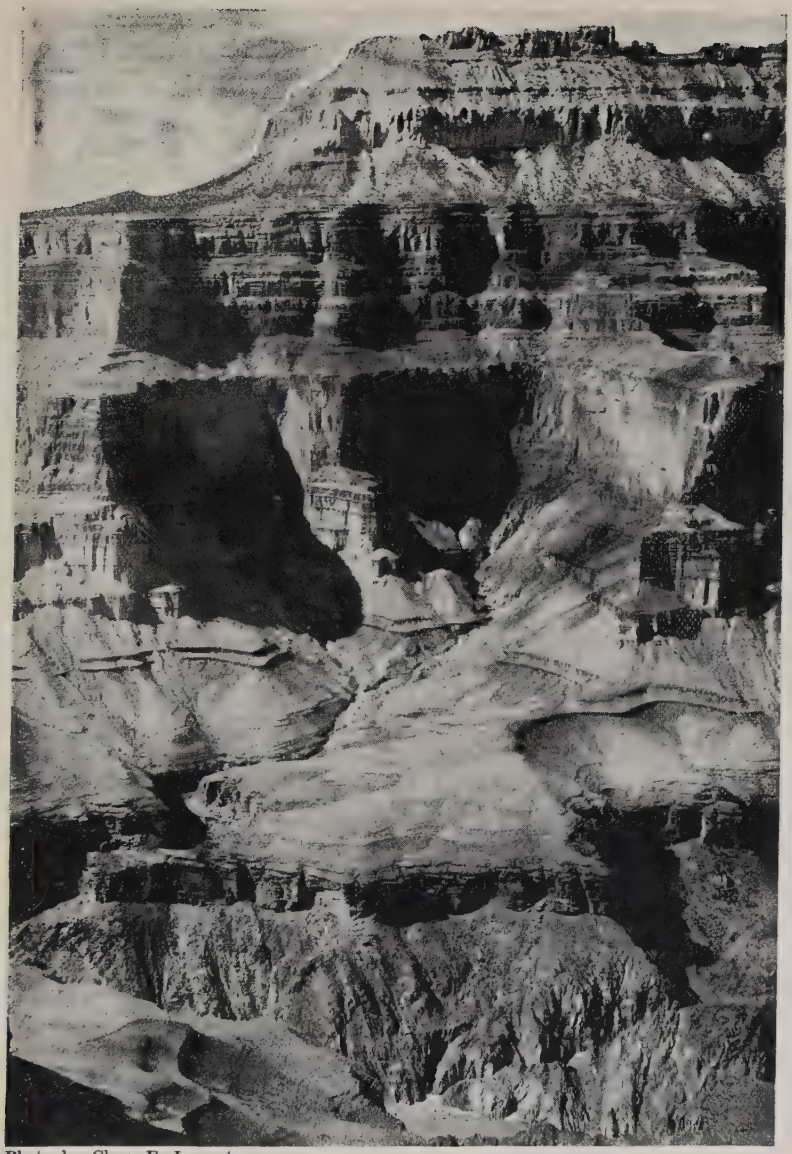


Photo by Chas. F. Lummis

A DETAIL OF THE GRAND CAÑON

6000 feet—from river to rim

they will be fully indorsed by the greatest artists, poets, and travelers who know the cañon.

All the talk of the Grand Cañon as a "gash," "saber-cut," and the like, is trivial. There is no word in geology to define its actual nature. It is the supreme example of erosion. It is a Cosmic Intaglio carved deep in a plateau of a hundred thousand square miles. The carver is the river, whose waters bend from back of Pike's Peak in Colorado in the Grand, and from mid-Wyoming in the Green, to join in southern Utah to make the Colorado and push its chiseling sands deeper and deeper through that vast upland. No straight channel for such a river biting through such rock! From side to side it hits the cliffs, like a man striking out with left hand and right hand as he strides on. As the channel sinks deeper, of course the angles are reduced. The 217 miles of Grand Cañon proper, measured by the river, would be several thousand if followed along the rim from beginning to end.[1]

And from side to side, branching as arms of an oak, innumerable tributary cañons join their great mother. And in this prodigious serpentine which results is a whole orography—as it were, *a Mountain Range in a Trap*—hundreds of miles of unearthly peaks, taller from the gnawing river than

[1] Powell.

Mount Washington is above the distant sea. Unlike the peaks we are familiar with, these are not up-thrust, but carved out, as a sculptor brings forth a giant's form from marble. Unlike, also, to ordinary peaks, you can read in graphic lines their geologic story for millions of years—from the black gneiss up to the light buff Kaibab limestone six thousand feet above. It is the only place on earth where you can come along a plain, and stop suddenly upon the brink of a painted panorama of a thousand square miles at a glance; of peaks, and pyramids, and pinnacles, and minarets, and towers, and domes, and temples, and mosques, and cliffs—all swimming in an ineffable light; a very mirage in immortal rock—unearthly, chameleon with the hours. At midday you may look across to a wall dead and flattened with the sun; but as the hours march along, the westering light dissects that flatness to a vast orography. Giant shapes steal forth into the foreground—and the background unfolds a thousand vistas with amethystine light and luminous shadows. And here and there, a mile and a quarter below you, and five miles away, a silvery gleam, a tiny tape—a short stretch of the terrific river—the insatiate serpent which has swallowed all these thousands of cubic miles of rock, and spat them forth a thousand miles below into the Gulf of California!

© A. J. Baker. Courtesy Santa Fé Ry.

CLOUDS AT PLAY IN THE GRAND CAÑON

Nor elsewhere upon this Footstool may you look from any vantage-point upon such square leagues of inverted and captive skies—of rainbows in solution, and snow-storms, and thunderstorms far below you, and brimming fogs that flow with the moon, and with dawn ebb and ebb—till one by one the wide, voiceless tide reveals the glorious "islands" of glowing peaks.

Before Time was, the venerable Grand Cañon already lay waiting, under the slow smile of God, for man to come to it and know His chiefest wonder-vision on earth. Through millenniums it has been worshipful and aweful to the bronzed First Americans, whose swallow-nesting homes still crumble along that amethystine rim. Caucasians were late of coming—though to us parvenus it seems long ago, in years and world-change. When Coronado's lieutenant, Garcia Lopez de Cárdenas, first of Europeans, stood upon this brink (September 14, 1540), Luther was walking the floor with his fretful Reformation, just cutting its teeth. Henry VIII was still adding new reels to his cinema of wives. His seven-year-old daughter Bess was learning never to lose her head (as mamma had done), and to have no heart to lose. She stayed unmarried as many times as papa did n't. It was forty years before Raleigh spread his cape for her. It was a generation before Shakspere, and two before Milton; seventy years before Eng-

Albion College Library

lish was spoken in any home in all the New World. There was not a printed Bible, except in Latin; and the King James version was nigh seventy years to the future. It was three centuries before the first friction match; over two hundred years before Ben Franklin invented the first cook-stove; twenty-five years before the first forks and steel needles. It was a world without kerosene, wire, cigars, potatoes, corn, whisky, side-saddles, public schools and libraries, quinine, rifles, tin cans, turkeys, newspapers, novels, radio, "movies," votes for women, vaccination—without even the sacred symbol, $.

As to the Franciscan missionaries—it was a week before our Declaration of Independence that Fray Francisco Garcés (first of Europeans) saw the cañon from the West. In the same month that General Howe defeated Washington's forces at White Plains, Fray Sylvestre Velez de Escalante was the first white man to cross (October 7, 1776) the chasm and its headlong river, which he did at the spot still known as Vado de los Padres, "The Priests' Ford." For some detail, see the Chapter on "Our American Sahara."

I would like right well to know just what those Spaniards, Garcia Lopez de Cárdenas, and his dozen men, really did say when first they looked down suddenly upon the world's greatest wonder that far day of September, 1540. We have it

only by the report to Coronado, who had sent them from the "Seven Cities of Cibola" (virtually our modern Zuñi), to make the discovery of the great river about which Pedro de Tovar had been told by the people of Tusayan—the Moqui villages of to-day. Cárdenas marched the twenty-five leagues from Zuñi to Moqui, and then with Moqui guides marched twenty days "well laden with provisions, since they had to go through a wilderness."

Castañeda, the dyspeptic but faithful chronicler of Coronado's marvelous explorations, records what Cárdenas reported:

> Having traveled twenty days [from Moqui] they arrived at the precipitous banks of the river which appeared to be more than three or four leagues to the banks on the other side, in an air line. The country, very high, full of low and distorted pine-trees, is very cold, open to the north; so though it was in the warm season one could not live on account of the cold. On this rim, they were three days hunting a descent to the river, which from the height it looked as though the water might be six inches in width, but the Indians said it was half a league wide. Descent was impossible; at the end of those three days, having found the least difficult part, Captain Melgosa and one Juan Galeras and another companion, the three most agile, set themselves to go down, and clambered down until those above lost sight of them, and they came back at four in the afternoon unable to finish the descent, for the great difficulties they had found, since that which

from above seemed easy was not, but very rough and precipitous. They said they had descended about one third the way and that from the point they reached, the river seemed very great, and according to what they saw they believed that it truly had the width the Indians declared. Some small pinnacles, separated from the rim, which appeared to be of the height of a man, those who descended and reached them swear that they were taller than the chief tower of Seville. This river was that of the Firebrand, far nearer its source than where Melchior Diaz and his people crossed it.

This, by the way, is the first identification of the river in the cañon, with the great stream in its lower course. It is probable that Cárdenas reached the cañon by the prehistoric Moqui trail in Marble Cañon.

The first "American" meddling with the Grand Cañon was by early trappers for beaver and other fur-critters, in the first half of the nineteenth century. This does not include the "Lost Trappers" of 1809, whose story by one David H. Coyner pretends to tell the adventures of Ezekiel Williams and others, including Workman and Spencer—of which Captain Hiram M. Chittenden, the authority on the "Fur Trade in the Far West," speaks moderately as "one of the completest fabrications that was ever published"; whereas Bancroft accepts it mostly as "told in a homely but truthful and direct way which commands the reader's respect and confidence." It

is less surprising that Colonel Inman, in his "Old Santa Fé Trail," also indorses the mendacious book. The "Personal Narrative of James O. Pattie" has been similarly swallowed by many authors as a "faithful work in very simple style, almost pathetic in its details of misfortune," but any one who can square Pattie's distances and dates with any topography still extant in the West is more ingenious than I; and his account of the "inhumanity" of the Californians to him, and of his miracle-working among them, would make a bear-trap smile. But there were unquestionably many of the old-time trappers who hunted pelts in the wilderness of cañons now called the Grand and its tributaries.

There is nothing strange in the current acceptance of such weird books. Even in this day of grace, Eastern magazines print stories and articles, and publishers put out books on the West so grotesquely absurd they would mortify a coyote.[1] My experience as for years reviewer for "The Nation" of the more pretentious books on the West and Spanish America, taught me how little we may expect genuineness and honest accuracy.

[1] Pronounced not Kí-oat, but coh-yóh-te.

CHAPTER III

THE GRAND CAÑON, Continued

The Rio Colorado and its American Explorers—Ives and Wheeler—Major Powell's Conquest of the Cañon—Historic Names

OUR official attentions to the Grand Cañon began with Lieutenant Joseph C. Ives of the topographical engineers of the War Department. An iron steamboat fifty-four feet long over all was built in Philadelphia, tried out on the Delaware, shipped in sections by way of Aspinwall to San Francisco, thence to the Gulf of California and the mouth of the Colorado, where it was put together. On December 21, 1857, Lieutenant Ives and his party steamed up the great river in their little stern-wheeler *Explorer*. They reached as far as the Virgin River, up at the Great Bend, where Utah and Nevada come together, a distance of 530 miles by river from its mouth. Thence, dropping back a way and picking up a pack-train which had followed them from the gulf, they made their way up to the Great Plateau, and saw Cataract Cañon and the Grand Cañon, of which the

geologist of the expedition, Dr. J. S. Newberry, gave us our first, and a very good, geological account. Thence, they went on to the Moqui villages and to Fort Defiance, where their labors ceased. Ives' excellent report of the river and the Grand Cañon is our first official "source." In 1869 Lieutenant Wheeler explored the Grand Cañon from below, reaching up to Diamond Creek, where Ives had been in 1858. Mr. Gilbert, his geologist, added still more to our knowledge of the great gorge.

Pigmy as man and the world of men seem beside this indescribable workshop of the cosmogony, this masterpiece of His gladdest moment, for His own very joy, millions of years before the modest insects who call themselves His sons, and to last without visible change until the breaking up of the whole bony structure of the planet—still, probably God also meant, and made on purpose, the only other thing as great as the Grand Cañon—the conceit of man. The best of us (which means the humblest) cannot wholly dissociate ourselves from the smug tradition that all the marvels of the universe were made by the Almighty solely for the benefit of man. We would even think it a little irreverent to fancy that God made the Grand Cañon just for fun; obviously, He made it to entertain Us! But I have no desire to be superior.

Speaking, then, in terms of our own little equation, there is one man among Americans whose name stands out as worthy to be really associated with the Grand Cañon in such perpetuity as we can give. The heroism of Cárdenas in 1540, of Garcés in 1776, and Escalante in 1776 cannot be surpassed. But the one-armed college professor who first threaded the terrific labyrinth of those cañons for a thousand miles, and in another expedition completed the conquest of the river—he is to be remembered always, not only as the hero of the Grand Cañon, but as one of the greatest American heroes.

Major John Wesley Powell, born in 1834 in New York State, of English parents but recently arrived, enlisted as a private in the Civil War, left his good right arm at Shiloh, and came out a major in 1865. In the same year he became professor of geology in Illinois Wesleyan—properly enough, as he was himself named after the founder of Methodism. He was a very powerful man, of great determination. In the latter years, when I knew him, he invariably reminded me of an old bison in presence, a monarch of the herd; but he was a man loved and revered. In 1869, the same year that Lieutenant Wheeler was attacking the Grand Cañon from below, Major Powell took four rowboats and descended the great cañons of Green River through the whole labyrinth to

the mouth of the Rio Virgen (to which Ives had come from the gulf in 1858), Powell's distance being more than a thousand miles. In the spring of 1870, with three boats, he descended the cañon to the Vado de los Padres, where Escalante, first of Europeans, had forded the cañon nearly a century before. Major Powell devoted about a year to this exploration, taking from his boats to the plateau, with a party and a pack-train, exploring for ways down into the Grand Cañon from the northern rim.

In the summer of 1871 he made another exploration by rowboats, descended through Marble Cañon, and then through the greater part of the Grand Cañon itself, leaving his boats at approximately the point where the railroad now touches the cañon at El Tovar.

His experience in the West stirred and enabled Major Powell to make two further and very great contributions to science. In 1879 he succeeded in organizing the United States Geological Survey and from 1881 to 1894 was its director. He likewise brought about the organization of the most important scientific branch of the government, the Bureau of American Ethnology, and was its director until his death in 1902. In 1918 a memorial stone altar, supporting a bronze tablet with a brief account of his first expedition, was erected on the brink of the Grand Cañon.

Major Powell, by the way, was uncle to the famous violinist Maud Powell.

In 1882, Major Powell, with C. D. Walcott, now director of the United States Geological Survey, went down into the depths of the Grand Cañon from the north by building a trail near the mouth of the Little Colorado; and here Walcott spent the winter with a party studying the geology of the region. There is nothing more fascinating than Major Powell's modest account of the hardships of these tremendous journeys, an epic story of pure heroism.

Major Powell's description of the geology of the Grand Cañon, in brief, will be found in an appendix.

Since Major Powell, there have been many attempts, some of them successful, to descend the Grand Cañon by boat—partly instigated by the desire to build a railroad through this incomprehensible labyrinth. In 1889 F. M. Brown lost his life in one of these expeditions; but finally a party of engineers led by R. B. Stanton navigated the gorge from the head of Marble Cañon to below Grand Cañon, and made a railroad survey.

Probably the jauntiest assault upon the cañon's labyrinths was that made a dozen years ago by two young brothers from Ohio who had "beat their way on the brake-beams" to El Tovar on the Grand Cañon. The spell came upon them to

Photo by Bonine, circa 1880

THE RIO COLORADO

And one of the old sternwheelers

emulate Powell. They labored at Bright Angel Trail for several years as amateur photographers, and finally had three thousand dollars saved up. Then—for the threading of the Cañon! These youngsters, Ellsworth L. and Emery C. Kolb, started from Green River, Wyoming, September 8, 1911, and arrived at Bright Angel Trail November 17, after a trip of fearful dangers and hardships and hairbreadth escapes, during which they made many photographs and some moving pictures. Resting there a month, they started from Bright Angel December 19, down the river, and reached Needles January 18, 1912. In May, 1913, Ellsworth, the elder, got a boat at Needles and went down the great river to its mouth in the gulf, alone, in eight days; so he really "covered" the Colorado—a total distance of about sixteen hundred miles. In that distance there was a fall of about 6000 feet; 4300 feet of it in the 500 miles of the upper cañons, and 2330 feet in the 282½ miles of the Marble and Grand Cañons.

The Colorado is not only richer in scenery than any other river on earth; it is also sixth in size of the great rivers of North America. Its historic romance also dates from far earlier than that of any other North American river, except the Mississippi—nearly seventy years ahead of the Hudson. It is navigable from its boisterous mouth in

the Gulf of California, notable for extraordinary tide-bores, up to The Needles and Fort Mohave and even nearly to the lower corner of Utah. The old flat-bottomed stern-wheel steamers were long a notable feature of the grim desert down which the "Red River" (that is what the Spanish "Rio Colorado" means) draws its broad ribbon of silver and green, sharp as a knife through the barren sands.

For half a century this shifting, turbulent waterway was very important in transportation. The first of these steamers was the *Uncle Sam,* which was put together at the head of the gulf in December, 1852, and came up the river to Fort Yuma (founded in 1850, just where Father Garcés founded his mission of Purísima in 1780). In 1854, the *General Jim Jessup* was put on, and in 1855 the *Colorado.* Old Captain Polhemus was for a third of a century a noted character on the river, and occasionally in the little Mexican town of Los Angeles.

The great Red River of the West has borne many names. In 1540 it was called "Rio del Tizon," or "Firebrand River," by Melchior Diaz, who records that the naked savages ran about with firebrands to keep them warm in cold weather. In the same year, Hernando de Alarcon, another of Coronado's captains and the first man to discover California from the East, called it "Rio de

Buena Guia,"—"Good Guide River." In 1604 Juan de Oñate, the colonizer of New Mexico, named the stream (which he descended on his wonderful march from New Mexico to the Gulf of California) "Rio Grande de Buena Esperanza," the "Great River of Good Hope." The great Jesuit missionary, Father Kino (Kuehne, who first gave the Gila River its present name in 1697), named the Colorado "Rio de los Martires," "River of the Martyrs," for the missionaries, including Father Garcés, who were massacred by the Yumas at present Fort Yuma, in 1781. It was also mapped and recorded variously as "Rio Colorado del Norte," and "Rio Colorado del Occidente"—for there were many "Colorado" or "Red" rivers in the early Southwest, from Texas to California. Later names, of our own pioneering, were "Red River of the West" and "Red River of California." The oldest name of all was naturally that by which the Indians called it; Father Garcés records that the Yuma name was "Javill"—also written "Hah-weal." The ancient Pima name for the river was "Buqui Aquimuti." A curious fact is that the name "Rio Colorado" was first applied (by Oñate in 1604) not to the great river itself, but to a trivial tributary which enters it west of Winslow, Arizona. Trivial, except in floods—when this driveling, sandy course becomes a besom of destruction and sweeps off

bridges and railroad miles as if they were straw. This is what we call now the Colorado Chiquito, or Little Colorado.

From the point where the Green River enters the Flaming Gorge, at the southern boundary of Utah, to the lower end of the Grand Cañon of Arizona, a distance of upward of one thousand miles, 90 per cent. at least of the channel length lies in the bottom of cañons whose walls vary in height from a few hundred to several thousand feet.

It is a notable fact that within a radius of fifty miles from the Grand Teton, in Wyoming, three of the greatest river systems of North America take their heads: the Missouri, the longest river in the world, extending 4221 miles from its source to the Gulf of Mexico; the Colorado, to the Gulf of California; and the Columbia, to the Pacific.

The point whence Mr. Warner saw the cañon was at the head of the Hance Trail, in the Kaibab Plateau. That was in the old days of the sixty-seven mile stage ride from Flagstaff to the pioneer camp, the first on the cañon, established about forty years ago by that quaint old-timer, John Hance; famous for a generation among travelers, and rather glorying in his reputation as "the best single-handed liar in the West." He was picturesque, dramatic, a born raconteur; a

kindly and dauntless soul, and fine company for many a world-known traveler at his camp-fire; and his "whoppers," which far *out-whopped* the doughty Baron Munchausen, were purely to entertain, and never malicious. A typical one was of his famous white horse "Darby." It would be too long to tell it in Hance's whimsical and discursive fashion; but this is its gist:

"I was ridin' on the rim just below here, one day, when Darby come round an uprooted pine and stepped right up on top of a she-grizzly as big as a buffalo—and you ought to seen him pull his freight! Stop him? Why, man, the Day o' Judgment wouldn't have stopped that hoss! I tried to haul him to one side into my wood-trail; but he just naturally *helled* straight for the rim, and before I could fall off, there we was way out in the sky, pretty near half-way across the cañon! I give him the rowels and the quirt, sort o' hoping he could reach the other bank; but it was n't in him; and we went down like a rock—down and down and d-o-w-n—plumb to the bottom. Pore old Darby! I never *will* get another hoss like him!"

"But how about you, John? Why were n't you killed, too?"

"Huh! Too smart! You see Darby fell about sixty-five hundred feet; but just before he lit, I jumped off—so *I* only fell about twenty feet!"

Perhaps no college professor ever came nearer making geology interesting to 250 unlicked cubs of undergraduates than did that stirring, red-haired, red-whiskered, inspired N. S. Shaler, of Harvard, forty-odd years ago. His talk was a living thing, and he drew swift and telling diagrams on the big blackboard; and when we were stupider than usual, he would snap out pleasantly, "Use your brains, gentlemen! Use what brains you have!" I have often hoped that fate at some time was kind enough to Shaler to let him take a class to the Grand Cañon, where no man needs to draw a diagram—where the very Book of Creation is open, plain for all to read, after a few lessons in geologic spelling.

Like the Hebrew Bible, it "reads backward"—but from the bottom of the page. For down there, in the Granite Gorge, where the plowman river is still furrowing deeper, you see the oldest rocks known to the geologist, the Archæan, part of the Igneous crust that cooled from the inner fires. And above, in the order of the earth-building, the Algonkian and Cambrian, and all the sedimentary rocks which were laid down under seas from the sandy waste of continents; and uplifted, and again let down below the ocean, and another thousand feet or so of sediment compressed to rock upon them; and so up and down, down and up, subsidence and uplift, till at the top the vast

colored blankets of the Pliocene and Pleistocene periods close the entry.

Geology has no almanac. Centuries and millenniums concern it not. It deals with vast periods at which we can only surmise, but which are rated by the millions of years. Even to the layman, it requires little thought to figure what inconceivable duration it must have taken, each time this great plateau of a hundred thousand square miles sank imperceptibly below the sea; and lay there long enough for a thousand-foot stratum to be deposited upon it in grains of sand and compacted to rock; and then, as imperceptibly, this whole vast region uplifted high for the storms to beat upon its face again, and again to begin to erode it. And when you count the sixteen geologic divisions represented in yonder cañon wall, the imagination turns dizzy at the thought, "How long, O Lord?"

When I first went into the cañon (on my "Tramp Across the Continent" from Cincinnati to Los Angeles in 1884), the only feasible approach to the Grand Cañon was by way of Peach Springs, whence twenty-three miles over an impossible "road," whose sides were lined with wrecks of vehicles—as I have seen some of the Andean trails broidered with the skeletons of llamas and mules—took one to the bottom of Diamond Creek, and a mile farther to the edge

of the river at the bottom of the Grand Cañon, here not more than four thousand feet in depth. In 1898, when I took Dr. David Starr Jordan and party to the cañon, it was by the excellent stage line which had been installed from Flagstaff sixty-seven miles to the pioneer camp of Captain John Hance, where Mr. Warner also saw it. But to-day a Pullman runs over the sixty-mile branch of the Santa Fé from Williams to the side of a charming modern hotel at El Tovar, of the same management which has made the eating-houses along the Santa Fé world-famous. There is a little community here of smaller hotels also, tent houses and cabins—to say nothing of the extremely interesting "Hopi House," a very good replica of one of the strange terraced houses of the Pueblo Indians of Moqui, and tenanted by charming specimens of these fine people, living as near to their old quaint aboriginal life as modern self-consciousness will permit.

Shortest of my many visits to the Grand Cañon, but a memorable one, was when I came from Los Angeles by appointment to meet President Roosevelt at El Tovar, and be his companion for four days of his first trip to California. No one "ever got a bigger mouthful of the Grand Cañon in one bite," as one of the Rough Riders who had flocked thither commented. He was insatiate—and as

near "prepared" as a human could possibly be—which means that he had an intelligent foundation for the most overwhelming surprise of his life. He preached a mighty good sermon that day, May 6, 1903, to the little congregation of three or four hundred who had come in—mostly old-timers of New Mexico and Arizona. Among other things he said:

"The Grand Cañon fills me with awe. It is beyond comparison—beyond description; absolutely unparalleled throughout the wide world. . . . Let this great wonder of nature remain as it now is. Do nothing to mar its grandeur, sublimity and loveliness. You cannot improve on it. But what you can do is to keep it for your children, your children's children, and all who come after you, as the one great sight which every American should see. . . . *Don't let them skin* this wonderful country—as they will try to do."

He also flung a missile at the plan to build a hotel upon the very brink. I was in the vortex of this problem for a long time, being in consultation with my long-time friend E. P. Ripley, president of the Santa Fé System, Paul Morton, vice-president, and others concerned. My feeling was strong that no work of man should crowd impudently into the forefront of this ineffable scene; and Roosevelt and Ripley were fully agreed. But the spoiled-child Public could not be expected

to walk around a corner or up a hillock for the greatest picture on earth; and the new hotel, El Tovar, was built where it commands a full view of the cañon. But the architecture, construction, and placement, notable for modesty, restraint, and good taste, have minimized the irreverence; and the presence of this artistic rustic hotel is not an offense—indeed from some of the farther "Points" which jut out at either side the amphitheater, this man-made object is attractive.

If I were dictator, no American should be allowed to vote or to hold office, either in Washington or in a women's club, who by the age of fifty years had not visited the Grand Cañon. There would be a disability also for those who tried to skimp this patriotic duty by a day's hasty glance. It is essential, for any comprehension whatever of this stupendous and complicated wonder, to spend several days in its presence, riding or driving or walking along the rim, both up-stream and down. It is absolutely necessary, too, to descend one of the trails, either afoot (as my six-year-old daughter did once) or on the sure-footed mules (with whom there has never been an accident) down to the river, or at least to the lower plateau from whose brink one can look down into the granite gorge and the growling river. It is only by descending into the cañon that its tremendous scope begins to be

understood at all. There is no eye so trained, nor imagination so winged, that it can conceive from above the vastness, the mystery, the wonder of this subliminal world. And when one has sounded the depths, then one may sit on the rim, and "place" the giants around whose knees he has crawled, and "relate" depth and distance and the setting of the Titan stage—whereon the invisible scene-shifters of light and shadow and cloud and storm shall stage a new drama every hour.

CHAPTER IV

OUR OWN SAHARA

"The Great American Desert," Then and Now—
Here and There Conquered and Redeemed,
But Still Deadly and Untamable

IN a way, the "Great American Desert" was far better known half a century ago than it is to-day. Then its terrors and its wonders were vivid in the memory of tens of thousands of the hardy Argonauts who had traversed that fearful waste on foot, beside their dawdling ox-teams; and hundreds had left their bones to bleach in that thirsty land. The survivors of that tremendous and appalling journey had a very definite idea of what that desert was—its heavy sands, its savage rocks and splintered peaks, its shadeless, glaring sun, its chilling nights, its stifling siroccos and stinging sand-blasts, its desolation, its treachery, its lying mirages, and the stalking terror of its thirst. Now that we can roll across it in a day in Pullmans, and even scamper over it with the automobile, its real—and still existing—terrors are almost forgotten; and we do

not realize that it is, in very fact, an unconquerable and unendurable desert, much as we may pride ourselves upon our little conquests of it in spots here and there. I have walked its hideous breadth alone and wounded—seven hundred miles with a broken arm—and realize something more of its nature from that grim acquaintance in 1884 than hundreds of crossings of it by rail in later years have taught me. Now every transcontinental railroad spans the great desert, whose vast arid waste stretches up and down the continent, west of the Rocky Mountains, for nearly two thousand miles. The northern routes cut its least gruesome parts; but the two which traverse its southern half—the Santa Fé and the Southern Pacific—pierce some of its grimmest recesses.

Our growing need of such a railroad as had never been built in the world before—a two-thousand-mile railroad across the continent to reach California and its gold—led the Government to many explorations of this dread area in the early fifties. Captain L. Sitgreaves set out from Santa Fé in the autumn of 1851, and "felt-out" the country by way of Zuñi to Fort Yuma and San Diego, having many brushes with the Mohaves. His report, which we have in Senate Documents, gives maps, and many drawings of the landscapes, birds, animals, fish, snakes, and plants. Lieutenant A. W. Whipple made a similar journey in

1853-54, and Lieutenant E. F. Beale in 1857. These and other engineers and explorers gave us scientific assurance that we have here a desert as absolute as the Sahara.

But these were of course not the pioneers by centuries. Cabeza de Vaca, the "First American traveler," floundered for years in the extreme south of this desert in 1536 to 1539, crossing it from the coast of Texas. And Francisco Vasquez Coronado, the first explorer of what is now the United States, trudged two thousand miles across it, and back as far, in 1540-42. Fray Marcos of Niza, the heroic Franciscan missionary, who spied out the land before Coronado and was the first discoverer of New Mexico (which then included Arizona), explored several hundred leagues of this wilderness on his scouting trip. In fact, the heroic Spanish pioneers in the more than two centuries of their exploration and colonization scoured virtually every portion of that enormous and forbidding wilderness. Even up to the beginning of the nineteenth century, many of their expeditions were extraordinary achievements. Think of attempting, two centuries ago, to open a road from San Antonio, Texas, to northern California! In 1604-05 Oñate, the colonizer of New Mexico, made the grisly march from Santa Fé to the Gulf of California and back—a trip which none of our own

"American" heroes ever really rivaled. Among the most heroic darers of the desert were the Franciscan missionaries. No Spanish expedition marched without one; but these gray-robed pathfinders made *entradas* of their own, afoot and unprotected; and very many of them won the martyr's crown among the savages they had braved the wilderness to save. They left more complete record than our own later explorers did—if only their *diarios* had been accessible to us; for every expedition, even of a single priest, was strictly required by the crown of Spain to keep a diary journal; and by slow degrees our scholars are translating and publishing these precious historical records. A few years ago the lamented Dr. Elliott Coues brought out the *Diario* of Fray Francisco Garcés, one of the most dauntless of these lonely travelers. Friar Garcés was a typical Franciscan of his day—for thirteen years a frontier apostle among the Indian tribes of the Southwest, a tireless and fearless explorer, and a chronicler of great importance to the historian. In the years when our colonies were approaching separation from England, Garcés was pioneering the trackless desert of Arizona and California. In 1768 he came up from Tepic (on the west coast of Mexico) by boat—and their little craft was tossed about for three months and a half in getting up to Guaymas on

the Gulf of California! He settled at the mission of San Xavier del Bac, whose beautiful church, built in 1699, is a noble example of the old Jesuit architecture and is still a famous "sight" from the near-by city of Tucson (which, despite foolish fables of its antiquity, was founded in 1776). Later, in 1768, was his first *entrada* to the Gila River and back, only sixty leagues—a mere bagatelle for a clergyman to trudge! The second, in 1770, also to the Gila, was ninety leagues. The third, in 1771, quartered all about the Gila and down it, and down the Colorado nearly to its mouth; and when he got back to his mission he had recorded three hundred leagues. His fourth *entrada,* in 1774, was in company with the expedition of Lieutenant-Colonel Juan Bautista Anza, who went to open communication between Sonora and Fray Junípero Serra's new mission at Monterey, California, Garcés going with them as far as the mission of San Gabriel, California, and thence returning to the Colorado River to await the return of the expedition. Anza and the party later joined him at the junction of the Gila and the Colorado, and left him there for further exploration, while they marched on to Tubac. Alone —for the servant Anza left with him took fright and would not go on—Garcés traveled far up the Colorado River, visiting many Indian tribes, and finally reaching his mission after a tramp of seven

months and five hundred leagues. In 1775 he joined the memorable expedition by Lieutenant-Colonel Anza which founded the city of San Francisco—one of the best managed expeditions ever made on this continent. In the century and a half since, probably nothing has equaled the achievement of Anza in taking his expedition of 240 people, and 1050 beasts, across those fifteen hundred miles of desert without loss of man or animal. One woman did die (in childbirth) on the journey, but three children were born.

Talk about caravans on the Sahara! The most consummate pack-trains in history were those organized by old Tom Moore under General George Crook, greatest of Indian fighters, in the Apache campaigns of the Southwest; but when in 1886 I retailed to that grizzled veteran, from Father Font's *Diario,* the roster and itinerary of Anza's march from Tubac in Sonora to the founding of San Francisco, the past-master of mules threw up his hands. "That beats my time," said he. "Sure it beats hell!" Fancy moving across uncharted deserts, without roads, bridges, supplies (and for ghastly leagues without water), a more considerable population than there was in any frontier town of Sonora!

Besides the Commandante Anza, there were three priests (two of whom were to remain on the Colorado, and Fray Pedro Font went on as chap-

lain and chronicler), a quartermaster, a lieutenant and a sergeant, eighteen veteran soldiers, twenty new soldiers recruited for Monterey, twenty-nine wives of soldiers, 136 other women and children, and some male relatives of these soldiers, twenty muleteers, three herders, four servants and three Indian interpreters; 140 mules were loaded with provisions, munitions of war and presents for the Indians, twenty-five mules with the baggage of the troops; there were 530 horses, mares, and colts, and 355 cattle—some for subsistence of the expedition on the road, and the rest to start a herd in the new settlement to be founded on San Francisco Bay.

It was a wonderful journey altogether; and even getting that caravan across the Colorado River was no small trick. They forded and swam it about where Yuma now stands, and to the California side where Father Garcés founded his mission of Purísima Concepcion in 1780, and was martyred by his savage flock in the Yuma massacre of 1781; and where Fort Yuma was founded by our government in 1850. From here, the expedition proceeded on its way; and Garcés was left to await the return of Anza, and to explore that savage region and learn the character of its wandering tribes. With three Indians he explored the Colorado River down to its mouth, which he was one of the first Caucasians to reach

overland; he returned to where Yuma now is, and plodded three hundred miles up the river to the present Mojave; thence he went into that grim California desert, where he was the first white man to see (Mch. 9, 1776) the Mojave River, which he followed from the "sink" wherein it dies, up almost to its pine-browed, trout-swarming fountain-head in the San Bernardino Mountains, which he crossed, and came again to the mission of San Gabriel. Then on up into the Tulare country, where he first discovered Lake Tulare; and over the Kern River and the site of the present Bakersfield; and back to the Mojave River, and to the Colorado; and thence to the remote cliff-perched pueblos of the Moqui, being the first white man to see the Grand Cañon from the west; and back to Mojave, and down the river to Yuma, and up the Gila and across to Tucson—after a journey lasting from October 21, 1775, to September 27, 1776, and covering nine hundred leagues. In his five *entradas* this dauntless priest traveled more than five thousand desert miles. To such as know the dangers and hardships of his itinerary, even in this mitigated day, nothing in his pithy journal is more impressive than his silence about the inevitable sufferings. To realize how little self-pity is involved in his records, compare his simple line: "A difficult road . . . and another worse one,"

with our sturdy Lieutenant Ives' two pages of graphic but unexaggerated account of the hardships of his entry to this same Cataract Cañon eighty-two years later. Garcés was also first to describe that strange human-rabbited hole-in-the-ground, Cataract Cañon, though Cárdenas, Coronado's captain, who was the first civilized man to look upon the Grand Cañon of Arizona, probably saw this spot also in 1540.

But Garcés was only one of many explorer-missionaries. Nor was his tremendous record unequaled in mileage. Of all that have tramped the Great American Desert—hunters, trappers, soldiers, prospectors—the record by class undoubtedly belongs to the Franciscans, though the great Jesuit Father, Eusebius Kuehne (commonly called Kino), made a wonderful score before 1700 in our Southwest and in Lower California. Fray Juan de Padilla came up with Coronado in 1540, and finally lost his life a martyr among the savages of Kansas.

Contemporary with Garcés, and of notable achievement as an explorer and chronicler, was the Franciscan missionary at the romantic pyramid-pueblo of Zuñi, Fray Silvestre Velez de Escalante. He made many *entradas,* especially to the pueblos of the Moqui, whom he found a stiff-necked and perverse generation, and recommended that the government subdue them by force

of arms and establish a presidio there. But his most notable achievement was the three-hundred-league round-trip from Santa Fé, July 29, 1776, to January 2, 1777, trying to open a northern route to that bothersome settlement of Monterey, California. With eight companions, he pierced the wilderness of Colorado and Utah, and finally was obliged by the character of the country to turn south into the labyrinthine side cañons of the Colorado. On October 7, 1776, in the same month that General Howe defeated Washington's forces at White Plains, he forded the headlong river, the first white man that ever crossed the Grand Cañon. His valuable and interesting *Diario*—preserved in the precious Ramirez collection of manuscripts, where I copied it years ago—describes the whole journey with a modesty and precision habitual in these official accounts—as to distance traveled daily, the nature of the country and the people, latitude and longtitude, and so on. Since he was the first white man that ever crossed that incomparable gorge, his own account of the day is worth quoting.

Arriving, the day before, in a terrific "torment" of thunder and lightning and hail at a plateau in the lower gorge of the river, they sent three men exploring to see if the Indian ford was at this point. The scouts reported that the river was here very wide and did not seem to be very deep,

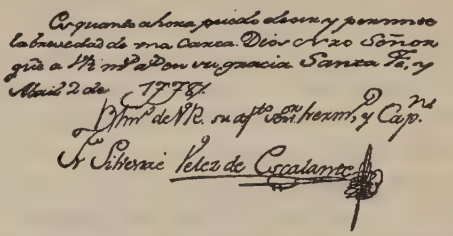
but that the water could be reached only by the side cañon by which they camped. Escalante goes on:

On the seventh we set out very early to inspect the cañon and ford, taking the two "Genizaro" Indians, Felipe and Juan Domingo, to ford the river on foot, since they were good swimmers. To lead the horses by the bridle down into said [side] cañon, it was necessary to cut steps with an ax in a cliff for the distance of three yards or a little less. The rest of the way the horses were able to pass, though without cargo or rider. We got down into the [side] cañon, and having gone a mile arrived at the river and followed down it some two musket-shots, now in the water and now on the shore, until we reached the point of greatest width of the current, where appeared to be the ford. One [of the Indians] entered on foot, and found it good without being obliged to swim at any point. We followed him horseback, taking it a little further down stream, and in the middle two horses which went ahead lost land and swam in the short channel. We held our place, although with some peril, until the first foot-forder returned from the other bank to conduct us, and we crossed happily without the horses on which we were riding having to swim. We notified our remaining companions, who had waited in San Vicente [as they named their camp of the night before], that with ropes and reatas they should let down the pack-saddles over a cliff not very high at the corner of the ford, and should bring the horses ahead by the way we ourselves had come. They did so, and at above five in the evening we finished crossing the river, singing praises to God, our Lord, and discharging some muskets in

sign of the great joy that we all felt at having conquered so great a difficulty which had caused so much hardship and had so detained us; though, indeed, the principal cause of our having suffered so much since we entered the Parussis was having lacked any one to guide us in such bad country. It was for want of experienced scouts that we made so many detours and were detained so many days in such a little distance, and suffered hunger and thirst. And now that we had suffered all this, we learned the better and more direct road, where the water-holes were scattered to fit a moderate day's journey . . . [recounting many points where they could have taken a better route]. But without doubt, God disposed that we should not secure a guide, partly as a benign punishment, partly that we might acquire some knowledge of the peoples that dwelt here. His Holy Will be done in all things, and His Name glorified.

The ford of the river is very good. It must be here a little more than a mile in width. And here come incorporated the rivers of Navajo and of Dolores, with all the others, which in this Diary we have mentioned as entering, one and the other. And in all that we have seen here, it would not be possible to establish on its banks a settlement of any sort, nor to journey by either bank down-stream or up-stream a good day's travel, with hope that the water would serve for the people and horses; for besides the country being bad, the river goes very deep-boxed. The wall nearest the ford, of cliffs and peaks very lofty, eight or ten leagues northeast of the ford, is a round mountain, high and slender, which the Payuchis, whose habitat begins here, call "Tucane," which means "Black Peak"; and it is the only one seen from here. The river passes very close to it.

On this east bank of that same ford, which we named "La Purísima Concepcion de la Virgen Santisima," is a fair-sized corner of good pasture. In it we passed the night and observed by the polar star that the latitude is 36 degrees 55 minutes. . . . Here the mountain sheep [big-horns] breed in such abundance that their tracks seem to be of great flocks of tame sheep. They are larger than the domestic sheep, of similar build, but much swifter.



AUTOGRAPH OF FRAY SILVESTRE VELEZ DE ESCALANTE
FIRST TO CROSS THE GRAND CAÑON

CHAPTER V

DEATH VALLEY

A Land of Bleaching Bones and Vast Mineral Wealth—The Grim Story of a Heroic Party—The Ship in the Desert

THE very focus of the Great American Desert —the concentration and climax of its terrors, and its region of most sinister fame—is Death Valley in Southern California—yes, in Southern California; this Sodom side by side, almost, with our modern Garden of Eden! On all the globe, there is no spot more forbidding, desolate, deadly. It is a boiled-down epitome of molten sands and blinding heat and the thirst that kills. It lies in Inyo County, just east of the tallest peak in the United States—Mount Whitney, nearly 15,000 feet—and of that wonderful range of the Sierra Nevada, wilder than the Swiss Alps, and studded with glacial lakes and a few remnant, dwindling glaciers, and the noblest forests known to man, and the richest veins of precious ores. On the west side, this mighty Alpine range, five hundred miles long, slopes comfort-

ably to the great interior valleys of California and to the Pacific; but its eastern face is the most abrupt in any cordillera for so great a distance. The tremendous winter snows send down floods to this eastern desert, and there are many ancient channels; but no stream in all that great watershed reaches the Colorado River for the sea. Spilling over the great cliffs, roaring down savage cañons, these snow-fed floods roll a few miles out into the burning sands in courses they carved in eons past; and there they die, in some prehistoric basin of a dry lake, whose bed becomes a great mine of the mineral salts washed down from the Sierra.

It is one of the grim paradoxes of the Great American Desert—this juxtaposition of the highest point in the United States and the lowest point in all the New World; the most hopeless inferno and the most delightful paradise. It is a greater contrast and contradiction than is the famous Dead Sea of Palestine, with which it inevitably suggests comparison. Death Valley is at its lowest point 480 feet below sea-level, while the Dead Sea is 1295. But Death Valley is walled on the west by the Panamint Mountains, 10,937 feet, and on the east by the Furnace, Amargosa, and Grapevine ranges, rising to 8000 feet; while the Dead Sea's neighbor, Mount Moab, has an altitude of only 4400 feet. The Dead Sea is 47½

miles long, and ten wide at most; while Death Valley is nearly 150 miles long, and ten to thirty in width, the tops of its limiting mountains being only twenty to thirty-five miles apart. And so the "jump" is far greater here—within ten miles, from 10,937 feet above the sea-level to 480 feet below, a difference of 11,417—over twice as much as the difference between the top of Mount Moab and the Dead Sea, which is 5695. The climatic "jump" is also much greater in the American case. In Death Valley the thermometer often reaches 140° in the shade—"and there ain't no shade!"—while only ten miles away, on the rugged Panamints, the thermometer sometimes records 30° below zero. There is no storied River Jordan to pour its six million tons of water a day into this great trough, and so there is no Accursed Lake here as in the Holy Land. Its "feeders," the Amargosa ("bitter") and Furnace creeks starve it to death—for there is rarely water in them. The latter is named, not, as might be supposed, from the fearful heat, but because on this dead water-course miners once erected a rude furnace for reducing ores. Another difference is that the American Sodom is enormously rich in minerals. The most beautiful silver ores I have ever seen in all my experience in the Three Americas came from the Panamints. What is very much more important to the world than its gold

and silver is that Death Valley has an inexhaustible supply of borax and related minerals. Only a few years ago the graphic photographs of "Twenty-mule-team Borax" were familiar throughout the country—now the mules have given way to motors, much less picturesque, but more humane. The flour-like dust of these alkalis, whirled by the violent winds inevitably bred in a region of such great climatic variation, causes unspeakable discomfort to the traveler, and may be immensely dangerous unless shelter is at hand. In contrast, at some points, there are great ledges of rock-salt; and Manly, one of the ill-fated party of 1849, tells of coming down a ravine after a storm, in blinding heat, and stepping from block to block of what appeared to be ice! It was really great blocks of rock-salt, cut up by an occasional flood from the mountains. A curious little touch is added by the fact that here in Death Valley also we find, as around the Dead Sea, the storied "apples of Sodom"—the "Dead Sea fruit" which has become a proverb of blasted hopes. And the mirage, common to all the Southwest, has in this region its most marvelous illusions.

The two grisliest journeys in our national history were both on the overland routes to California. The most horrible was that of the "Donner party," of eighty men, women, and children about equally divided as to sex, and led by Cap-

tain Donner. Coming too late in the season to the eastern slope of the Sierra Nevada, they were caught, high in the mountains, by tremendous snow-storms which penned them in and buried their cattle. They built cabins and sent fifteen of their strongest men over the mountains to California for help. But most of these died on the way, and the survivors were saved only by the hideous recourse of eating their dead. Relief parties from San Francisco finally brought out the few survivors, including the ghoul Keysburg, whom they found waiting beside his kettle in which were stewing parts of Mrs. Donner. Cannibalism had been practised in the snow-bound camp as well as on the trail. It is the only black chapter of this sort that I recall in all our history, except in a party led by "Old Bill Williams," who left his unworthy name to a noble peak and an important town in Arizona—the same Bill Williams with whom Frémont had so disastrous an experience in 1848 in the San Juan Mountains.

This was in the winter of 1846-47—before the gold discovery and the consequent rush. But aside from its ghastly menu, the fate of the Donner party was merely that of people snowed in.

Gold was discovered in California long before the sensational "find" of Henry Marshall at Sut-

ter's Fort on the American River, January 19, 1848. I have a nugget washed out from the San Francisquito Creek within thirty miles from Los Angeles in 1833; and I have panned out gold at the Old Placers in New Mexico, back of the Ortiz Mountains from Golden, which were worked by about 1820. But these "diggings" caused no fever among the placid Mexicans, and no stampedes. But that enterprising Swiss trader and man of affairs, Captain John F. Sutter,[1] was rather the pioneer of the new era. There were a few Americans in California—none of them looking for gold or mines, but most of them susceptible to the "yellow fever." And they all caught it hard at news of the "discovery." There were no telegraphs nor mail-trains, nor even the pony express; and by sailing vessel around the Horn the great news traveled very slowly. It was well along in 1849 before the gold fever raged epidemic throughout the Eastern states of the American Union; and expeditions of gold-seekers set forth from every corner, like the marshaling of the hosts of Lars Porsena of Clusium. By ship around the Horn, or to Panama and floundering across the deadly isthmus, and by ship along up the West Coast; and by caravans of "prairie-schooners" drawn by many yokes of oxen, across the prairies and through the mountain passes, they swarmed.

[1] Pronounced Soot-er.

Among all the great migrations of history, the gold rush of 1849-50 stands alone in the character of its movers. Never before nor since nor elsewhere have so many men, women, and children, of such high average education and social standing, traveled so fast, so far, so laboriously, across such inhospitable wilderness, and stormed such mountain battlements, on foot, on horse or mule, or in the rumbling old Conestoga wagon. There was much trouble, too, with the Indians—owing, of course, to ill treatment of those First Americans by these new invaders. All early expeditions across the continent, from Lewis and Clark in 1804 onward, were treated well and generously by the natives. It was only when less seasoned travelers reached the plains, and took a pot-shot at the first Indian they saw, as they would at a jack-rabbit, that the hostility developed which led in later years to so many bloody Indian wars.

In the autumn of 1849 five hundred emigrants, who had reached Salt Lake in various parties, banded together to take the "southern route" to California; and on the last day of September they set out from the southern end of Utah to cross the desert. There was no "route" whatever—no roads, no trails—but there was "lots of room," and they decided that instead of following the northern route, already well broken, they would avoid the Rocky Mountains by going around their

southern end. There were 105 great Conestoga wagons, with their big bows and huge wagon sheets drawn tight over so as to form an almost cylindrical tent, each drawn by several yokes of sturdy oxen. Beside them trudged the shaggy men, rifle in hand, while others who had horses scattered ahead for game and water and for "sign" of the dreaded Indians. The women and children were comfortable and safe in the great hooded wagons.

As there was no road to settle the question, there was nothing to embarrass opinions as to where the road ought to go; and there were many divisions of judgment, which were argued at every camp-fire. Finally, five wagons and their people turned back toward the East to reach Santa Fé, whence there were dim old Mexican trails to Los Angeles. This party comprised virtually all of the women and children, with the exception of one family, that of the Rev. J. W. Brier, his wife, and their boys of four, seven, and nine years. The rest of the caravan did not wish any family burden; but Mr. Brier forced himself in. He afterward became the best known of the expedition, preached the first Protestant sermon in Los Angeles, and was for many years a Methodist clergyman in northern California. He told me his story in 1885; and, with a little amateur camera, I made of him perhaps the first portrait I ever took.

The five-wagon party, by the way of Santa Fé, reached California in December, after great sufferings. The big caravan of one hundred wagons traveled comfortably for a few days till they reached a place about where Pioche now is. Then they entered the Land of Thirst; and from then, for three months, they wandered lost in that inconceivable wilderness of horror. That whole great plateau is split up by numerous cañons and their tributaries, feathering out like the outline of a river system on a map, but with great valleys or cañons or clefts or ravines instead of harmless map lines. Not a very favorable topography for ox-carts! For a while they were able to "head" the smaller cañons, and follow down some of the smoother valleys; but it soon became impossible to go further with the great lumbering Conestogas (which were to the overland freighting what the Concord coach was to the early stage lines), and in bitterness and apprehension these were abandoned. The most necessary bedding, provisions, and supplies were "packed" on the clumsy and unhabited oxen; knapsacks and shoulder-packs were donned by the men, and the grim tramp began. From day to day their hardships grew. It was farther and farther from water to water—and many of the streams were so alkaline as to be a serious menace to health. The grass grew shorter and shorter—and grass meant the life of their animals. Wilder and more inhospit-

able grew the country; and they were constantly coming to places where it was almost impossible to get the oxen through—in some cases letting them down over cliffs by ropes. One by one, the oxen succumbed and fell; and those that struggled on were gaunt beyond description. Seven eighths of the meat of an ox was packed in two knapsacks for two volunteer scouts, Manly and Rogers. The bones were cracked to the marrow, the intestines were cleaned and eaten. The meat of these emaciated creatures was rank poison. For the last four weeks the struggling party had nothing to eat but ox-hides scorched and then boiled to a bitter jelly. Day by day some of the party sank upon the burning sands, never to rise again. The skeleton survivors were too weak to help the fallen. One foor fellow named Isham revived in the cold night (which always follows the heat of desert days) enough to crawl four awful miles on his hands and knees in pursuit of his companions, and then succumbed. They had found a little spring of water, and, when enough refreshed themselves, two men took back canteens to Isham. He was still alive, "but his mouth and throat so dry and parched, and his strength so small, that he was unable to swallow a single drop, and while they waited, he breathed his last." I can understand this pretty well myself. On my tramp in 1884 I had been three days without water when I

reached the clear shallow Mojave River near where Victorville stands to-day. My tongue was an inch out of my mouth, hard and dry, and so swollen that my teeth could not close by half an inch. I rushed into that blessed stream, which is about one hundred feet wide and six inches deep, and fell on my face, broken arm and all, and *soaked.* It was more than an hour before I could get a drop down; and the first swallow gave me excruciating pain. The horrors of death by thirst have never been exaggerated in any description that has come under my notice. Hunger is not in comparison—it is in a way its own anesthetic. I have been eight days in the wilderness without food, in bitter cold, with no greater discomfort than faintness; with no pangs and no delirium; and when at last I got a handful of birch buds, they did not distress me in the least. But thirst is torture—madness—illusion—delirium; and the desert seems to mock the hallucinations of the mind. The mirage showed them glittering cities —trains of horsemen—above all, water! I have seen, in the desert, lakes as blue and shimmering and unmistakable as ever gladdened the eye; and have trudged hours to reach them—only to find them bare and burning sand. And again, lakes which *would* have water, when you staggered to their brink—but water accursed, undrinkable by man or beast. And even more than hunger, thirst

unseats the judgment and distorts reason and haunts the thought. One of the survivors of the Death Valley party wrote forty years afterward: "As they slept, they dreamed the most tantalizing dreams of delicious bubbling water, of wading knee deep in the most beautiful ponds, of hoisting the old moss-covered bucket from some deep, old well."

It was commonly agreed that the "best man in the party" was wee nervous little Mrs. Brier. She had come to Colorado an invalid, and weighed only ninety pounds; but she came through that ghastly journey better than any of the athletes, and she "carried" her family—not only her three little boys, but her 175 pound husband. It was she who put the packs on their oxen in the morning and took them off at night, built the fires, cooked the food, cared for the children. "It seemed almost impossible," says Manly, "that one little woman could do so much. It was entirely due to her untiring devotion that her husband and children lived." For that matter, she lived for many years afterward and saw her sons grow to useful manhood; a daughter, born in California, was long a notable mission teacher among the Indians.

They crossed Death Valley at about the middle, which is not more than a dozen miles wide, but

suffered indescribably. Nine young men, stronger than the average of the wasted band, reached this terrible trough ahead of the others and perished with thirst. Years later, their bones were found, cuddled there in a little volcanic bowl to which they had crawled to escape the cold winds of the night, by Governor Blaisdell and his surveyors; and he gave the name "Death Valley" from this circumstance.[1] Four others of the party also died in this valley.

At last, struggling across the upper arm of the Mojave Desert, below where the town of Mojave now stands, they came into better country, and crossing hills, came down a little valley now known as the San Francisquito and saw cattle on the distant hills; on February 4, 1850, they emerged from this little pass just opposite a ranch-house of the famous and beautiful Camulos Rancho, a paradise owned then as now by the princely Spanish family of Del Valle. Here the half-dead wanderers were tenderly cared for with all the old patriarchal hospitality of California "before the Gringo came." From starvation, they came to bounteous fare—limitless eggs and milk and mutton and beef and bread; and here they were kept and tended until they regained strength. For example of their starved condition, Mr. Brier weighed 175 pounds when he started in

[1] Though Manley claims to have given the name.

September. When he reached Camulos he weighed seventy-five.

Of the whole expedition, the most active and efficient contingent was of about thirty-five men known as the "Jayhawkers." It was to this party that the Briers attached themselves. Among them, one of the most dauntless spirits was a sixteen-year-old lad named John B. Colton. Years afterward those who had "made their stake" in the California diggings and returned to their Eastern homes organized the Jayhawkers Union; and in this Captain Colton was the leading spirit. Every year a little before or a little after February 4, this grizzled veteran was sure to turn up at my home—on his way to, or return from, the annual reunion, which he held at the point most easily reached by the few survivors. It was beautiful to see the reverent zeal with which he cared for his old comrades and kept alive the memory of their almost unparalleled journey. When he was last here, a few years ago, only two others of the party were still living; and two years later, I believe, he was last of all to die. He had invaluable scrapbooks dealing with every phase of the Death Valley party and should have written the full story, for his grasp of details was notable. Another survivor (not of the Jayhawkers) was William L. Manly, a Vermont boy, who had drifted West,

adventuring, and was twenty-nine when he joined this expedition. In 1894 he printed a 500-page book on his Death Valley and other experiences, commonplace in style but very illuminating.

In one of the most Homeric of American poems, Joaquin Miller immortalized the "Ship in the Desert"—a frontier myth touched with the mirage. The story was current for a generation that out on one of those extinct seas in the Arizona desert man had seen an ancient ship half buried in the drifting sand. With each retelling, the wonder grew; and the great California bard perfected the mystery.

They pierced at last
The Desert's middle depths, and lo!
There loomed from out the desert vast
A lonely ship, well-built and trim,
And perfect all in hull and mast.

No storm had stained it any whit,
No seasons set their teeth in it.
Her masts were white as ghosts, and tall;
Her decks were as of yesterday.

The sands lay heaved, as heaved by waves,
As fashioned in a thousand graves;
And wrecks of storm blown here and there,
And dead men scattered everywhere.

The monsters of the sea lay bound
In strange contortions. Coiled around

A mast half heaved above the sand
The great sea-serpent's folds were found,
As solid as ship's iron band;
And basking in the burning sun
There rose the great whale's skeleton.

To right and left around them lay,
Yea, golden coin and golden cup,
And golden cruse and golden plate,
And all that great seas swallow up,
Right in their dreadful pathway lay.

It is a very pretty example of the development of a myth; and, like most myths, it had a foundation in fact. There *was* "a ship in the desert"—but no "Strong Ship of Solomon, in quest of Ophir by Cathay," nor Spanish galleon. It was a curious venture of the Yankees who had settled in Southern California. In 1853 a carpenter named William H. Perry came to Los Angeles, where he became in time a very important and honored citizen. In the Sixties he built a sixty-foot scow to be used in navigating the Colorado River, and it left Los Angeles on huge wagons drawn by a long train of oxen. It crossed through the San Gorgonio Pass safely, and down into the deep desert, toward the bed of an immemorial sea, long dried and dead. But the heavy sands and the thirst and the lack of vegetation were too much for the patient oxen; and out in mid-desert, the enterprising ship-builders were compelled to abandon their barge and escape with the oxen

"ICEBOATING" ON A DEAD LAKE OF THE MOJAVE DESERT

and wagons. There the big scow, tilted as it was slid from the wagons, preserved by the extreme aridity, buried and stripped again by sand-storms, outlasted the decades. Probably parts of it are there yet, unless chopped away by travelers for fire-wood. But one can imagine how it thrilled some superstitious prospector, who first came upon its half-buried prow amid the burning sands, and how easily his story grew to tall romance.

Another paradoxical navigation of the great desert is shown here by an unusual illustration. In certain regions are the dry beds of great dead lakes—some of them forty miles long, smooth as a floor. Years ago a whimsical Easterner, who had been used to ice-boating on the Hudson, came to the Mojave Desert to mine; and, being near one of these dead lakes, he built an "ice-boat" on wheels and often cruised about that strange dusty sea, attaining terrific speed.

Our only native palm (the "Washingtonia" or "Californiensis") persists in a few sheltered cañons of the Great Desert's western hem—notably at Palm Springs, Cal. These lone Saharan groves are last and sole survivors of the tropic jungle that once covered California. So it seems less strange that Dr. Gilbert E. Bailey, University of Southern California, has discovered a great Miocene reef of snowy-white coral in the western mountain-wall of Imperial valley.

CHAPTER VI

OUR "SHIPS OF THE DESERT"

A Forgotten Chapter of Days When "Jeff" Davis's Camels Served the U. S. Army in the Southwest

AN important and romantic chapter in the story of the Great American Desert is almost unknown to-day. It has never been adequately written, even from the exhaustive official documents in Washington; and it is late to write it now, for the personal recollections which would have embellished it have perished largely with the passing of those pioneers who took part in that curious drama. The way in which it caught my attention to study it is itself rather curious and human. In 1903 a picturesque character was brought to me in Los Angeles, as a sort of "defender of the poor," to see if I could help him get a pension. He was a modest, well-mannered, sturdy man, with a Homeric beard and a thatch of hair, both so dense as to seem almost bullet proof. As a matter of fact, an Indian arrow, in a fight near Camp Mojave, had struck him square

in the jaw and barely scratched the flesh through that matted beard! "He came with the camels." What camels? "Why, the government camels." He was Greek George, born in Smyrna; but in fifty years he had forgotten all his Greek, and had learned no English. He spoke only Spanish—and that very well, after California models. He interested me, and so did his story. I had heard much of camels in Arizona, but not surely as to their origin. And so I took up his case—and the study of the camels. A few days later, Greek George came again, bringing a burden of fresh vegetables from his ranch at El Monte; and I learned more about the camels—and a very pleasant personal connection with him. My home in Los Angeles is built Spanish-fashion around a patio in whose center towers a giant fourfold sycamore, its branches hovering the roof on all four sides. Greek George walked around and around it, and went out and explored the little valley, in which there are many sycamores, though none other so big. "Why," he said, putting a respectful hand on my shoulder and looking reverently up at the great tree, "*Seguro,* this is the very one! I thought so the other day, when I first came to you; but this big stone house and the fountain make it look different. But there is the very hollow where I tucked my *alforja;* and I slept there in the very lap of the

great tree. For when I came here with the camels in 1858, in October, going to Fort Tejon, I camped me under this *aliso* with my eighteen camels. And now I find here a Friend!"

There was a big dinner here, that night, and I coerced Greek George to stay. The bath removed his stains of farming, and his blue jeans were cleaned. He had never before sat to such a table and such a company; but he carried himself irreproachably, with the modest poise of his patriarchal kind, and gave a good account of himself in conversation, I interpreting. He sat beside Francis Fisher Browne of "The Dial," and opposite was that queen of the American stage, Helena Modjeska, and her husband, Count Bozenta, all of whom asked him many questions. When we had come well along in "community singing," I begged Greek George to sing. "Surely, though you have forgotten Greek, you must remember the songs your mother taught you, the songs of when you were a boy." Timidly, leaning against the door-jamb, he began; and one by one, as he sang, the old folk-songs of his native land came back to him. And tears ran down into his huge beard—and tears trickled down the cheek of Modjeska, and many others of that brilliant company were wet-eyed. He was no singer; but, lost in memory and emotion, he held us spellbound for half an hour.

Photo by Chas. F. Lummis

GREEK GEORGE, A DRIVER OF JEFF DAVIS'S CAMELS

Photo by Chas. F. Lummis

MOJAVE INDIANS AT HOME

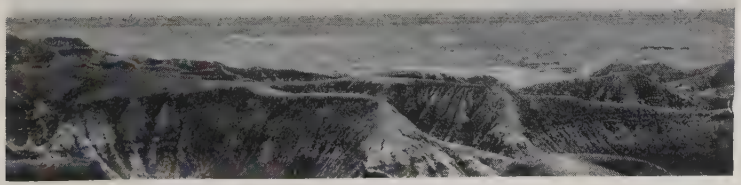


Photo by H. H. Teabolt

THE PAINTED DESERT

With that, I began to dig into the story of the camels. What could be more appropriate for a desert, than the traditional "ships of the desert"? Yet how many Americans know not only that we had a Great American Desert, but that the only steps the government of the United States ever took to bridge it, except by subsidizing stage-lines and later the transcontinental railroads, was actually and seriously made by the medium of the camel? And how many, even of these, dream that the man who invented and carried out this remarkable experiment was one of the most noted of American statesmen, and later the most hated —the only man who was ever a President *in* the United States, while not President *of* the United States—Jefferson Davis?

Mr. Davis was a scholar and dreamer, yet a man of affairs. As a congressman in 1852, and later as United States senator, he had become deeply interested in the Great American Desert—a problem Congress could hardly forget. The dream of a transcontinental railroad was still vague; the Overland Stage and the Pony Express—the most romantic transportation any continent has ever known—had not yet been established. It was not until 1858 that the wonderful Butterfield Stage Line, the longest in history, 2880 miles from St. Louis, far south, via El Paso, Tucson, and Los Angeles to San Francisco, began

its astonishing run—given up when the Civil War broke out, since so much of it was in Confederate territory. It was not until 1860 that the even more romantic Pony Express carried mail from Independence, Missouri, to San Francisco, 1950 miles, in ten days—never requiring eleven. The great stage king, Ben Holladay, had taken over the stage lines, and his swaying Concord coaches made this same 1950 miles in twenty-one days, carrying passengers. The vast wastes, almost unpeopled, between Missouri and California, were without roads and virtually without communication. But at the end of that two thousand miles of desert was the richest land the world had known—California—mining ten times as much gold every year as had been found in the whole United States from Plymouth Rock up to 1849! And the only way to get there was by caravan or sailing ship. If camels carried the immemorial traffic of the deserts in the Far East, why not in the Far West?

When Mr. Davis became Secretary of War, he proceeded to make his dream come true. In 1852 he sent a commission from San Antonio, Texas, to Fort Yuma, Arizona, to report upon the feasibility of transportation by camel. In 1853 he secured from Congress an appropriation of thirty thousand dollars for the purchase of camels for the War Department. In 1855 he commissioned

Major Henry C. Wayne of the Army to proceed to Cairo and other places in the Far East to purchase camels, in conjunction with Lieutenant D. D. Porter, commanding the naval store-ship *Supply*. It was a notable expedition, very fully covered by Mr. Davis in his official report as Secretary of War to the Senate: "Respecting the Purchase of Camels for the Purposes of Military Transportation"—contained in a now rare volume (Senate Document No. 62, Thirty-fourth Congress, Third Session) of 238 pages and many illustrations. The commissioners secured, in three months in Egypt and Arabia and elsewhere, a fine assortment of camels at prices ranging from fifteen to a thousand dollars. Thirty-three of the beasts were loaded at Smyrna, with their native drivers, upon the store-ship *Supply,* which reached Indianola, Texas, on February 10, 1856, having lost three camels on the voyage. The thirty survivors were well, and were taken to Camp Verde, Texas, under care of Captain J. N. Palmer to become acclimated. Exactly a year later, the *Suwanee* brought in another cargo of forty-one camels, which also were sent to the interior, carrying loads of one thousand to fifteen hundred pounds each, and traveling forty to fifty miles a day.

It was a brave dream, but a total and costly failure. The "ships of the desert," which

navigated easily the sands of Egypt and Asia Minor, broke down on the mountainous and lava-strewn deserts of the Southwest. They were unpopular with man and beast; it was almost impossible to find hostlers for them; and horse and mule and burro stampeded at the smell of them. They were a nuisance and an actual menace to the slender military arm that then stretched from Texas to California. They could not be handled at all, except by their native drivers, and they were anathema to the whole army in the Southwest. They were tried out very thoroughly for several years, the whole plausible experiment costing several hundred thousand dollars.

"Temperament" seems to run in the camel family. The llama, as I know him, unhappily and too well, in Peru and Bolivia, could answer "Present!" to Kipling's graphic invocation to "the Oont, the hairy, scarey Oont, the Gawd-forsaken Oont," who "smells so awful vile." Of course the American marines hated these "critters," and in Smyrna, Lieutenant G. H. Heap of the expedition hired ten natives who were camel-wise. One was Greek George—Georges Xaralampo—a sixteen-year-old Greek boy working in the shop of Domingo Mimico. Others were his first cousin Georgino, aged eighteen; Kostes (or Constantino), Alexandrino, Mimico, and the Turk Hadji Ali (later famous in Arizona as High Jolly); and

four others. They came to this country with the camels; and ministered to them in Texas. In 1857 troops of the camels were maintained at the forts in El Paso, Texas, and Fort Bowie, Arizona. Twenty-three were sent to California, to Fort Tejon, headquarters of the picturesque General Edward F. Beale, of an early government expedition, surveyor and adventurer, whose enormous anl famous Tejon ranch called forth General Grant's witticism on viewing that lordly domain: "I see you are monarch of *all you survey!*" Greek George accompanied this contingent with a small escort of soldiers, fought like a trooper in several engagements with the Indians, swam the icy Colorado, swollen with melting snows, on the biggest camel, had charge of them at Fort Tejon (from which a troop of them made round trips to Los Angeles every few weeks for a year or so for government supplies), helped eat one which was butchered at the fort, accompanied them when they were shipped up to Benicia Barracks at the end of the war, and later conducted them back to Arizona, where they were turned adrift in the desert they had been designed to conquer. A failure officially, they throve fairly well in freedom and even increased. In 1860 they had been used in building a stretch of road for the Butterfield stages; in 1863, a camel express from San Pedro (the port of Los Angeles)

to Tucson, Arizona, was started, but soon failed. In 1870, some enterprising Frenchman rounded up twenty-five of them on the Arizona deserts and employed them for some time in Nevada, packing salt sixty miles to Carson River. For generations the surviving camels, shy as deer, roved the wastes of western Arizona, even wandering over into New Mexico, stampeding cattle and horses at lonely ranchos, and hunted down by wrathful prospectors. In 1895 two car-loads were rounded up and shipped to Chicago for exhibition; and even ten years later stray camels were not infrequently seen in the Arizona desert. It is not at all unlikely that a few still survive there, or in the lonely deserts below the Mexican line. At any rate, they outlived the only man that loved them, my fine, simple, wise old camel-driver, Greek George. He was naturalized in Los Angeles County (as George Allen) in September, 1866, and died at Whittier, California, on September 2, 1915, aged about seventy-five years. He never got his pension, though President Roosevelt was much interested in his case, as were several congressmen. He had served the government for many years and several times fought as a soldier; but he was not technically an enlisted man.

Three centuries before the time of Jefferson Davis, Pedro Portocarrero of Truxillo, Peru, imported a male camel and six females for use on

the Peruvian deserts. He paid Juan de Reinaga of Bilbao, Spain, eighty-four hundred ducats for them. Acosta, the great Jesuit historian, in 1590 mentions seeing them; and Humboldt, laying their failure in Peru to political "graft," strongly recommended the use of camels for freighting on the Mexican and Peruvian Saharas. So also did Clavijero, a quarter of a century earlier.

Probably Major Wayne, chief hero of Jeff Davis's camel experiment, is the only man that ever drove a span of dromedaries to harness in the United States, outside of a circus. He did this in 1856, in Texas, and found the team satisfactory.

CHAPTER VII

THE STRANGEST TRAP IN THE WORLD

When Elephants and Mastodons and Giant Tigers Roamed California, and the Death-Pit Which Has Here Preserved their Bones

BUT that is not all there is about camels in the Southwest Wonder Land. When I was a boy we used to see impressive steel engravings. "Adam Naming the Animals;" likewise, "Noah Bringing the Animals into the Ark." But if Adam had lived a few hundred thousand years earlier, he could have named a great many more very wonderful brutes that have never been seen on earth since long before his day. We do not quite realize that this country of ours was once as tropical as any part of the world is to-day; that our vast deposits of coal and petroleum did not just "grow there," but were buried by tremendous processes of nature from the wreck of such vast forests as nowhere exist to-day; and that long before man appeared on the planet at all, great tropical beasts ranged this land. It has been known for a long time, from here and there a lone fossil, that

the horse was once native here, though he became extinct ages before man appeared, and there were no horses in the New World until the Spaniards brought them four hundred years ago. It has been known also that there were small camels, akin to the llamas of Peru, and other quadrupeds which became extinct in the dim past. But it was not known that we used to have lions, and tigers, and elephants twice the size of Jumbo, and the biggest bird that ever was, and many other fearsome creatures greater than any of their kind that walk the earth to-day. And perhaps we never should have known a tithe of the wonder of the one-time American fauna, except for the recent discovery of the most astounding graveyard in the world.

Man has been a trapper from his earliest days, and the oldest literature, including the Bible, is full of reference to the snares and pitfalls and limings by which he secured his game. From the Hottentots to the Eskimos, from the Himalayas to the Rockies, in desert and jungle and eternal ice, man has always been a trapper. Away back in the very dawn of registered time the savages of the Dark Continent dug great pitfalls and set up sharpened stakes in the bottom and covered the hole with brush and scared the lumbering elephant and the preposterous hippopotamus into them, there, impaled and helpless,

to be slowly carved up by their puny foes. The deadliest trap ever sprung by man was probably after the Indians of our Western plains had acquired the horse (through the Spaniards); for sometimes they managed to surround a small herd of buffalo at an opportune point and drive them over the brink of a cañon. But this happened seldom; for no savage was ever a "game hog" like the American pot-hunter "sportsman" who in fifteen years exterminated the buffalo, killing about nine million of them wantonly and brutally. The Indian killed only what he needed—to eat fresh, and to cut into long strips and make into "jerky" (a corruption of the Peruvian word *charqui*, sun-dried meat). The killing of a thousand quail in a day by two young hunters, just "for fun;" the catching of innumerable tons of fish at California's magic isle of Santa Catalina, to be brought ashore and photographed with the proud fishermen, and then hauled out to be dumped into the sea by the boatload—these are not "savage," they are "civilized." Indeed, we owe manifold apology to our "inferiors" for speaking of certain human acts as "savage" and "beastly" and "brutal." They are simply depraved. They are not natural to man, but acquired vices of his luxury. Nature herself, having no conscience, has also no mercy. She destroys without pity; but also she creates

without end. Incidentally, she is a trapper without compare.

The most wonderful trap in the world—the strangest, the oldest, the most successful, the most interesting, and the most important to science and the story of this planet—was discovered in 1906 within the city limits of Los Angeles, California. It is a trap which baited itself and preserved its game for hundreds of thousands of years—and is still catching! It caught a vaster multitude of big game than any other trap that was ever set, and more than all others put together. It is the oldest and biggest book of natural history. It is the most important "find" ever made in paleozoology, which is simply the science of Animals-once-upon-a-time. It is also the strangest adventure in all that marvelous romance of petroleum —rock-oil.

In 1875 the greatest American geologist, who had studied California for years, wrote in the "Encyclopædia Britannica" that "while there were surface indications of petroleum, it was geologically impossible that California would become a great oil-producing State, and there could not be flowing oil-wells like those of Pennsylvania." Another victim of the trap! For within less than half a century California became the greatest oil producer in the world. But the "sur-

face indications'' had for unnumbered ages played an important part in human life. The ancient natives of California employed this outcropping asphalt or *brea* for all sorts of primitive uses. The first Spanish missionaries and settlers employed it for waterproofing roofs. From it, within these last few years, thousands of miles of the most perfect paved roads on earth have been constructed in California; and it has revolutionized automobiling, even as the oil has revolutionized railroading and steamboating. But its most important contribution to the world's knowledge has been—bones!

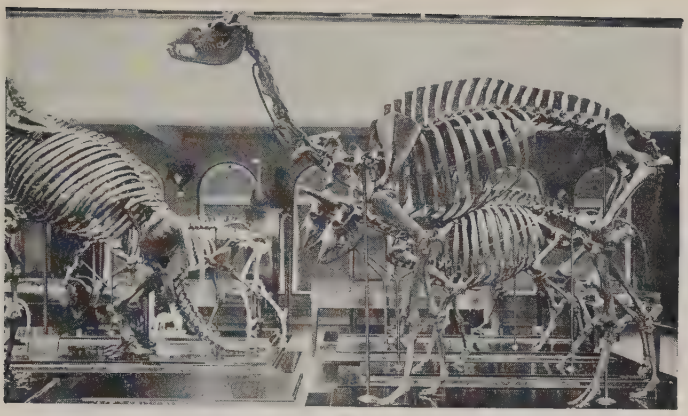
In the Pleistocene period, hundreds of thousands of years ago, Southern California was a tropical jungle, peopled with the largest mammals. By slow ages the land dried out, and lakes evaporated and rivers sank, and thirst came. What a grim epic it would make—the slow, grim desiccation, closing in on that tropic Eden as pitiless as the iron room in Poe's ''The Pit and the Pendulum''—the shrinking of the jungle, the parching of the herbage, the dwindling and slow extinction of the mighty beasts!

On the Rancho la Brea, beside which a modern American city of seven hundred thousand souls stands to-day, there was then—as there is now—a pit of ''live'' asphalt covering a few acres, with crude oil still bubbling up to its surface from the

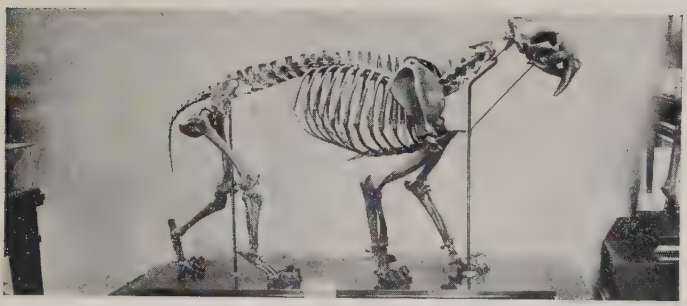
unknown depths. Of course, it was "waterproof"; and while lakes and ponds had succumbed to the encroaching drought, and the gravelly soil drank up the rains, water that fell into this big bowl stood upon the surface, sometimes to considerable depth. How dry the region must have become is proved by the multitude of creatures which came to this spot to drink the brackish water—and we know their multitude, because they *stayed!* This Brea pond was the deadliest trap ever set. Here the Imperial elephant, enormously bigger than the greatest now living, came down to drink; and waded in a little way, and was inextricably "bogged down." No quicksand was so merciless. Day by day he sank, imperceptibly, inevitably, trumpeting in rage and terror, thrashing vainly to drag his great feet from out that glue-like brea. Huge saber-tooth tigers, greater than the royal Bengal, sprang out upon his broad back and tore through his ponderous hide; and, quarreling among themselves over their living prey, some fell off into the pond and were themselves as hopelessly trapped. It was no single tragedy, but manifold—you might say a habit! A complete skeleton of the Imperial elephant had never been found before—but here we have unearthed seventeen. The saber-tooth tiger was already known to science, but none with tusks reaching below the lower lip; but in this in-

comparable graveyard there have already been found *six hundred and thirty* saber-tooth tigers, whose tremendous canine teeth average ten inches in length! We recognize the great cats—lion, tiger, jaguar—as most beautiful of quadrupeds; but fancy one of these giant tigers, with those terrible ivory tusks gleaming walrus-like far below his chin! Shere Khan would have crawled away at sight of a saber-tooth!

To any one whom they have hunted and treed and besieged, as they have me, the great gray timber-wolves that used to infest our northern New England forests looked about as huge and savage as could well be. But out here in Southern California the big wolf of Pleistocene days, far larger than the modern wolf, ranged in packs, and came also to la Brea death trap to drink and to prey on its ensnared victims. And more than seven hundred of these wolves perished here, bequeathing us their bones. But they were not restricted to a diet of elephant; for many more of the great grass-eaters were on the bill of fare: we have taken out seven mastodons, thirty-nine bisons, thirty-nine horses, thirty-nine camels, and as many of the giant ground-sloth, to say nothing of antelopes and deer. Nor were the wolves and tigers the only fierce carnivores; for here also perished the puma, the great American lion, and the jaguar. Museums elsewhere in the world



The Pleistocene Camel (Giant Sloth in front)



The Unique Saber-tooth Tiger

Imperial Elephant

REASSEMBLED MONSTERS FROM LA BREA FOSSIL PITS

have fragments of that strange extinct beast, the giant ground-sloth; but the only complete skeleton is from la Brea pit. And as to the little sloth, here were the only eleven skulls known to science. The skeletons of fifty species of quadrupeds and fifty species of birds have already been identified from this unique preservatory, and out of the vast mass of material new varieties are still turning up. Among the birds are the extinct California peacock, and that super-condor, the *teratornis*, "terror bird"—with a fourteen-foot spread of wing. I have felt the awe of the giant condor of the Andes, fairly brushing me with his swoop; and from an altitude of over 19,000 feet I have watched him sail moveless a mile above me, or, gorged and stupid, rise heavy and sullen when I was within a rod of him. But what a flopping there must have been, a half a million years ago, out here in California, when a flock of the fourteen-foot *teratornis* "took off" from the ground!

When you remember that these thousands of skeletons have been taken out of a space only 1400 feet long and 150 feet wide, you will admit that it is reasonable to call this the most extraordinary death-trap in the world and the most instructive graveyard known to science. Many of the creatures found here were not before known to exist, and the process of their preservation is

also unique. Nowhere else have skeletons been preserved in asphalt; and these are much more graphic and interesting than the fossil bones found in other parts of the world—sometimes in wonderful deposits, as at Agate Springs, Nebraska. You have seen flies or beetles immortalized in amber, and it gives one a queer wonder; but this black amber of la Brea has embalmed not merely little bugs but great droves of the hugest quadrupeds; and while it is not transparent, we can dig out these jumbled bones and clean them of the "tar" and articulate them—and see the forms of creatures which perished half a million years ago and which the eye of man never before beheld.

There are no more mastodons nor Imperial elephants ranging the suburbs of Los Angeles; but the strange, grim old pit has not forgotten its appetite. I have myself many times, within the last few years, seen its still living victims, now a jack-rabbit mired in a little rill from the bubbling asphalt, and again an owl or night-jar that swooped down upon what looked like water and got wings and tail so smeared it could not fly, and struggled there hopelessly until I put it out of its misery. The owner of Rancho la Brea has given to Los Angeles County thirty-two acres including the great death-trap and its ancient banks upon which the excavations have been made; and this

will be maintained in its present state, while the skeletons are preserved in the County Museum of Science, History, and Art. A human skull, taken from one of the pits, greatly impressed the gullible; but of course it was a mere "modern intrusion," though probably many centuries old.

Had Bret Harte been still alive his "Truthful James" might have added another chronicle of the "Society upon the Stanislow"—the cleverest satire on "the Calaveras Skull." But Harte, in his later days in London, grew ashamed of his "Heathen Chinee" and "Truthful James"—even as John Hay blushed for his "Little Breeches" and "Wreck of the Prairie Belle."

CHAPTER VIII

A RIVER OVERHEAD

Cotton and Cantaloupes, Cities and Rivers, Below the Level of the Sea—a Seaport Coming—Our Valley of the Nile

PERHAPS the strangest freak among all the many wild paradoxes of the desert is that which concerns its most southerly tip within our domain—the Imperial Valley and its "up-stairs river." Probably there is no other paradox like it on the globe, for here the great desert sinks again to far below sea-level—or, rather, never was uplifted since here was the bed of a very ancient sea—and here the giant Colorado, sixth among the great rivers of North America, takes a notion to rush overhead, almost like an elevated railroad! Until a few years ago this was the deadliest portion of the desert except Death Valley, and great salt lakes were the most notable feature of its landscape. In 1905 and 1906 the Colorado, three hundred feet above the valley, broke through an irrigating ditch; and down the mountain slopes poured its flood into the so-called

Salton Sea, making it a body of brackish water ninety-three feet deep and covering 470 square miles. This made a great sensation in "newspaper science," and the wildest theories arose. Many gravely believed that the climate of Los Angeles, 215 miles away, was "changed" by this inundation of the desert! But the value of this deep valley had already been discovered, and the fact that the silt of millenniums had formed a soil there of great depth and richness. The new settlements were threatened by the flood; and so was the transcontinental railroad which crosses the valley. President Roosevelt, with characteristic decision, took instant action, and also set afoot legislation by Congress. The closing of this great crevasse against the boiling flood was one of the most desperate struggles ever made by man in American engineering. It was finally closed in November, 1906, but broke out again the next month; and without waiting for Congress, Mr. Roosevelt sent the Southern Pacific Railroad, one of the chief sufferers and the best equipped agency for the work, to close up the gap. It was a fiercer struggle than before; but E. H. Harriman was equal to it. At last human courage and ingenuity and dogged persistence conquered, and the great "Red River of the West" was shut back finally to its lofty channel. Five years later, Congress repaid the railroad.

To-day this strange deep trough in the desert, thirty by forty miles in size and containing more than four hundred thousand acres, is perhaps the most productive valley of its size on earth. Its products from the soil in 1920 were estimated at seventy-five million dollars. The Colorado is harnessed safely now to maintaining this fertility. Water is taken from it four miles north of the Mexican line, and the main canal runs sixty miles through Mexico before it comes back across the international line to feed this American valley of the Nile through more than a thousand miles of radiating canals. The heat is terrific, but not dangerous—owing to the extremely low humidity—and sand-storms that seem about to pull your hair from your head rage there at will. Yet a smart snow-storm whitened the valley in April, 1921! But the soil is a gold-mine to the farmer, and of course there are plenty of people who would live in the worst climate on earth for such a consideration. There are in 1922 half a dozen little cities, and a total population in the valley of seventy-five thousand. Fruits ripen here much sooner than in any other part of the country. Land is too valuable for grazing, but the swift-growing alfalfa is turned into beef and pork; cantaloupes, asparagus, and other such products are produced enormously; for many years the United States Government has been developing

the quality of dates in the Arizona deserts; and in the Imperial Valley, this Arabian fruit comes to its best perfection. Within a few years the valley has become of serious importance to the nation as a foremost producer of the most valuable long-stapled cotton. In 1922 it has fifty gins for cotton and three mills for cotton-seed oil. There are fourteen thousand acres in cantaloupes, whose last year's crop brought six million dollars, filling eight thousand cars. It turns out seven million pounds of butter a year. The acreage in the irrigation district is 603,840. The valley is netted with concrete roads and with railroads, including two overland routes. Strangest of all, it has two "submarine" rivers, the Alamo and the New—no little creeks, but fifty-mile rivers, flowing into the Salton Sea, 280 feet below sea-level! The average rainfall in the valley is only one inch a year—a fifteenth of that of Los Angeles, and a twenty-fifth of that of San Francisco. But here the farmer is not dependent on Jupiter Pluvius; he just *telephones* for rain!—that is, to the gate-keeper of the canal, almost as high above him as a low-lying rain-cloud—and with a turn of the screws the disciplined water that has rolled a thousand miles from the northeast down the strange channel of the Rio Colorado comes leaping down the irrigation ditches to give his crops to drink. Here is about the last word in "farm-

ing by science, not guess.'' Godly as they were, our Puritan forebears were unmitigated gamblers. They farmed with iron industry and frugality, but without imagination. All New England is full of brooks and rivers enough to make ten times its area blossom as the rose if we had them out West; but I have seen all New England burned up with drought more than once, and likewise all the ''Middle West''—which is not West at all, and in every topographic and sociologic character is essentially Middle East.

This lack of imagination—such plodding stupidity—would have shocked any Indian of the Southwest. These First Americans did not need to wait to have the lesson brought over from Spain and the Moors, who taught Mexico as Mexico has taught us. No, two thousand years ago, amid the Great American Desert, along the scattered watercourses and by the rare springs, in Arizona and New Mexico and Colorado and Utah, these brown First Americans raised their little crops of corn and beans and squashes and, in some localities, cotton, with perfect certainty; their ancient irrigating ditches can still be traced for leagues.

The Colorado drains three hundred thousand square miles. It has not only carved the most marvelous gorge on earth, but is the most valuable of all American rivers for irrigation—and the

most obliging! The melting snows of the Rocky Mountains, in far-off Colorado and Wyoming and Utah, swell its tide high when there is greatest need of irrigation in California and Arizona, and its low-water stages come when there is no need of wetting down the farm. It carries enough water to irrigate three million acres—much more than are available within our territory, though there are half a million acres between the Needles and Yuma, on which its waters could be put, and some time will be, for there are already great plans for giant dams below where the river emerges from the Grand Cañon. There is also an interesting enterprise now afoot to bring a ship-canal from the head of the Gulf of California up to the Imperial Valley, and to make the seaport in the heart of this inland desert, nearly three hundred feet below the level of the sea itself! Thus it is not so strange to see plowing and harvesting in vast fields of crystal salt.

In the Southwest Wonderland the paradox is always with us. Out here in the very heart of the Great American Desert, in the very home of thirst, pigmy man has braved nature in a tremendous battle. Here in the driest of lands he has created the largest artificial body of water in the world. The Roosevelt Dam, seventy-five miles northeast of Phœnix, Arizona, traps the Salt River in a cañon and makes it a lake twenty-five

miles long and two miles wide. The dam is a monolith of cyclopean blocks of sandstone set in cement. It is 284 feet high, 170 feet thick at the base, and 1080 feet long on top. It would stretch four blocks up Broadway and would overtop twenty-story buildings. It impounds sixty-one billion cubic feet of water—enough to flood the whole State of Delaware a foot deep. It cost nine million dollars; and its waters will make a kingdom blossom as the rose. It was formally opened by Theodore Roosevelt, March 18, 1911—and adds a man-made wonder quite worthy of its setting amid the marvels of the Southwest Wonder Land.

In November, 1922, Secretary of Commerce Herbert Hoover brought together in convention in Santa Fé the governors and delegates of seven States claiming interest in the waters of the Rio Colorado. Plans were formulated for an equitable division of these waters; and the way is now open to colossal enterprises of storing for power and irrigation.

CHAPTER IX

THE OLDEST TREES IN THE WORLD

Kaleidoscopic "Forests" of Adamant—A "Petrified Bridge" of Agate—Wood Immortal—The First "Hard Money" in America

> Full fathom five thy father lies;
> Of his bones are coral made;
> Those are pearls that were his eyes:
> Nothing of him that doth fade
> But doth suffer a sea-change
> Into something rich and strange.
> "The Tempest."

A SEQUOIA in California is the oldest creature alive. It had measured a millennium when Christ walked the earth. But what 's a millennium? Ten thousand ages before the cedars bloomed on Lebanon, away out here in the Wonder Land of our own Southwest, when

> Wind, that grand old harper, smote
> His thunder-harp of pines,

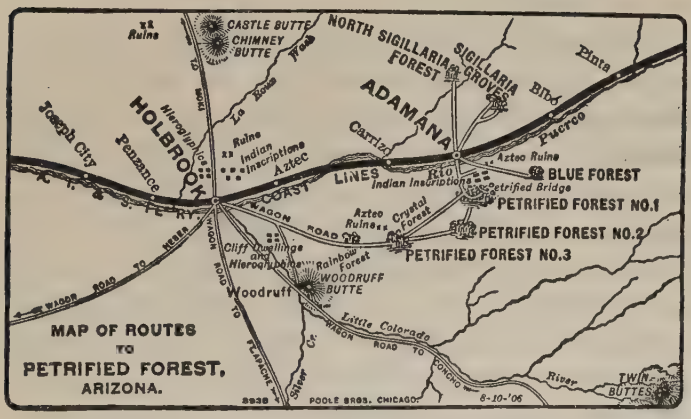
it was the identical pines that are with us to this day!

Not, indeed, as they were in that incalculable past—for they have put on immortality, and are

this side of Resurrection. They lived their green, long span, and were laid to rest under the coverlet of a continent, to sleep a geologic term.

Of all the Southwest Wonder Land—the most concentrated area on earth of the greatest natural marvels—the Petrified Forest of Arizona is perhaps the most puzzling. The modus of the Grand Cañon, the Natural Bridges, little and great, the other freaks of erosion or upheaval—these can be reckoned. They are intelligible and diagrammatic. So, also, are the human antiquities. But when we come to explaining the Petrified Forest, there is no diagram. The greatest geologists, the greatest botanists, have bumped their inconclusive heads against this problem. Even John Muir, the very Brother of the Trees, was puzzled how to unriddle it. He finally accepted, as more reasonable than others, the guess which I ventured after thirty years of study; and during his year's sojourn and investigation in the Forest, we had many serious powwows, memorable not alone for the technical discussion, but for the heights of prophetic eloquence to which the mighty mystery stirred that great mind. While Muir wrote charmingly, his talk, when the spirit moved, was almost incomparably grand. If he could have written as he spoke—instead of taking "buck-fever" at sight of a scratch-pad, and sometimes struggling "a whole day with one

sentence''—he would have stood almost unrivaled in American literature. He was one of the few men who could keep me from my desk all night; but along at 2 or 3 A.M., if he began to flag, I would spring some scurrilous story against the Scotch—and off he would go again, a very Jeremiah, a Solomon in the Song of Songs.



There are petrified woods in unnumbered quarters of the globe, and there are agates of many sorts and of many lands; but there is nowhere else in the world anything comparable to the four-hundred-thousand-acre Fossil Forest of Arizona. Doubtless, also, no other forest in the world has been useful to man so long as these trees of prismatic agate, which have been here since long before man crawled upon the globe at all.

The Santa Fé train will stop at Adamana, that

little station in the wilderness 231 miles west of Albuquerque, which has been adopted as the most convenient approach to the Petrified Forest; and it is entirely easy and comfortable to explore from this point the neighboring "forests" of *the* Forest—the Rainbow, the Crystal, the Blue Forest, and so on, to the south; and on the north the Black Forest.

Of course it is not a "forest" in the ordinary sense of standing groves—not as that classic Munchausen of the Grand Cañon, Captain John Hance, loved to tell, "a forest of petrified trees, with petrified birds flying through petrified air, singing petrified songs." Rather, it is a great "bad lands" of sandy valleys and clay mounds and beetling mesas, across which lie sprawled the prostrate and shattered sections of giant trees, and around them a very kaleidoscope of their rainbow agate "chips"—the most enchanted wood-pile one ever walked about.

How great was once this forest of giant conifers and willow-kind, no man will ever know—nor how much is still buried where ancient lava flows have pinned down its sedimentary blankets. About four hundred thousand acres of it are uncovered —at least eight distinct groves, some of them of many square miles. Myriads of acres are undoubtedly entombed under the great sandstone sheet which is in turn burglarproofed against

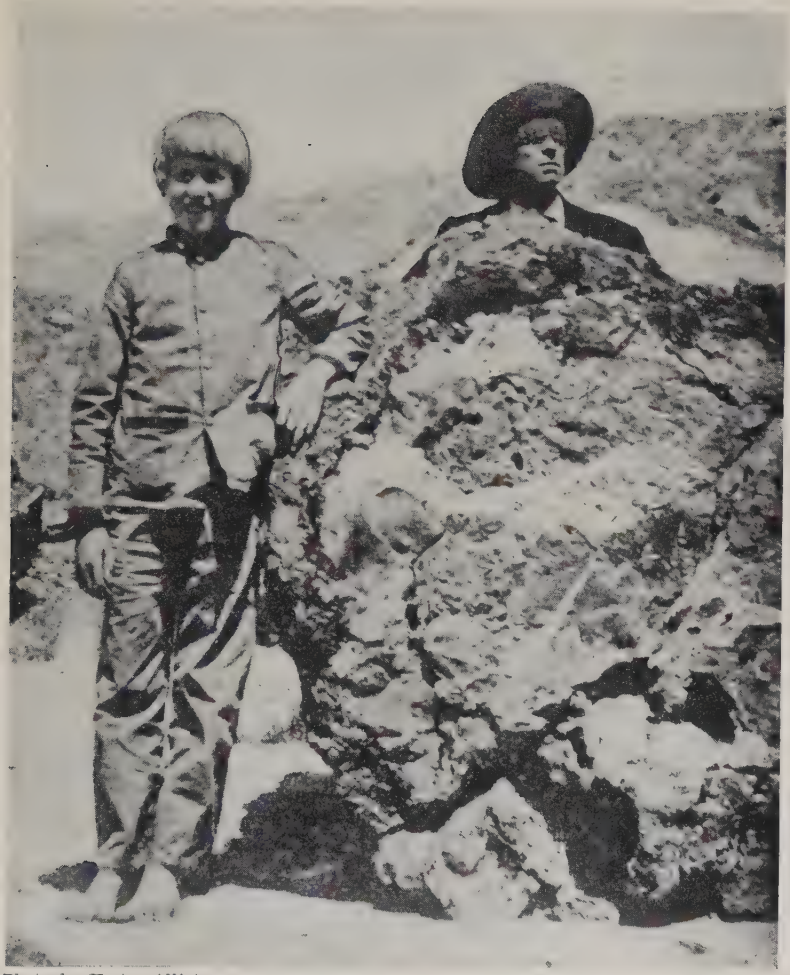


Photo by Hector Alliot

CHIPS OFF THE OLD BLOCK

The Author (then blind) and son beside a section of a great Agate Conifer

Time by its armor of lava; and myriads more are lost in the quicksands of the Rio Puerco. The gaps between these "groves" are always obviously by districts of erosion and drainage; the present valley is very likely to have followed the first run-off lines, and it is not unreasonable to presume that this incomparable forest was once virtually unbroken across its four hundred thousand acres. How much farther it may have extended east, west, north and south; how much of it may lie under the lava upon whose shallow coverlet of sand purr the eighteen thousand square miles of the Mogollon pine forests, to the west; how much under the lordly red sandstone mesas to the east (the westward sentinels of New Mexico), there is no guessing.

Not the least puzzle about this incomparable lumber-yard of precious hard wood is the variety of its grain, depending not merely on the genus of the original tree before it attained immortality, but still more on some whim of Nature in different parts of the vast laboratory in which she enbalmed these trees. The most bewildering and the most visited "forests" are highly agatized; but at the section-house of Bibo, seven miles east of Adamana, the agate forest is less than three miles from a deposit of dull-opaque, silicified logs, whose butts project from mesa sides under fifty feet of sandstone. In other parts of the

forest every cavity of the adamantine trunks is lined with crystals, sometimes microscopic, sometimes large. Thirty-odd years ago I knocked a fragment, not half so large as my hand, from the core of a hollow trunk; and on one side are half-inch crystals of smoky topaz, on the other, of purple amethyst—not two inches apart. In the old days, hundreds of logs, two to five feet in diameter, were dynamited by vandals for these interior gems; and a Denver company actually began grinding up this world's wonder forest to make emery! At one time a company from Sioux Falls undertook sawing sections from these trunks for table tops; and Tiffany long displayed a magnificent one, thirty-six inches in diameter and priced twenty-five hundred dollars. But this excusable industry was not profitable. To saw such a section wore a six-inch band-saw, running for many days wet in diamond-dust, down to a mere thread—and diamond-dust was the only thing that would cut the fossil woods of Arizona. But in 1906, by act of Congress and proclamation of President Roosevelt, this forest (or about sixty-two thousand acres of it) was made "The Petrified Forest National Monument"; and no more liberties will be taken with its precious woods.

Perhaps the most curious specimen from this bewitched area—and a startling token of the in-

comprehensible pressure which petrified the forest and turned kindling to jewels—is a fragment found by Al Stevenson, one-time guardian of the forest and one of the last of that brave, quiet breed that gentled the Frontier. Once upon a time there was a bee-tree in these preadamite woods. And it must have been full of honey. Whether they then had bees that built by squares instead of hexagons their skilful wax, or whether the tree reticulated for itself, we have here to-day a honeycomb compacted with little half-inch cubes of pure carbon through its generous hollow. It is the oldest sugar in the world—and the last that you would put in your coffee.

The Black Forest, north from Adamana, is among the most interesting of all, though not so dazzling and not agatized at all. It is calcified in dark adamant. Its landscape is one of the weirdest pieces of coloration in America. Some of its stumps are still upright, their futile fossil roots still clutched upon the wasting clays—putting a new hitch in our guesses as to the process which bewitched mere perishable trees to be eternal wonders. Up here, the huge *Sagillaria* throve; and in the Southwest Museum, in Los Angeles, we have one of its great terminal buds —a specimen unique, found and contributed by Mr. Stevenson. This portion of the forest is alleged by geologists to be "more of the carbonif-

erous period." For that matter, the largest coal deposit in the West (over five thousand square miles of nearly surface lignites and bituminous, where I have counted 103 veins in the wall of one cañon) is tapped at Gallup, seventy-five miles east of Adamana, with one thousand car-loads of coal a day. Instead of "sinking" for your coal, you just walk into a hill after it. The whole setting of the Petrified Forest is plainly carboniferous. Its sandstones, clays, and shales are recognizable even in photographs as precisely of the enormous coal-measures just to the east and northeast. Good luck that these heroic trees grew in other ages than that which swamped some still vaster jungle in the same region and charred its tropic vegetation to carbon. For while "black diamonds" and the "stone that burns" are very useful and fair to look upon in the bin when autumn comes, there is longer warmth to our hearts and thoughts in these incorruptible groves.

The agate "chips" of the forest were of the first "money" in America. Atop the five-hundred-foot cliffs that wall the valley of the Rio Puerco to the south are the ruins of Cliff-dweller towns forgotten before Columbus sailed. These primitive Americans controlled this aboriginal "hardware shop," whose wares were indispensable in the primitive economy—for making the very best and (what an Indian equally con-

sidered) the most beautiful knives and arrows and scrapers and drills and "saws." The bright spalls of creamy chalcedony, and mottled jasper, and moss agate, and agates red, black, blue, white, and yellow, were bartered so far as to Central Mexico and to our Great Lakes, to the Colorado River and the Mississippi, for the buffalo-robes of the Plains, for the bead-makable rice-shells and clam-shells of the Gulf of California, for the pipe-stone of Michigan, for the turquoise of Cerrillos, for the guacamayo plumes of Yucatan. I have myself traced these spalls and the implements made from them in prehistoric ruins so wide apart. There is no mistaking the polychrome fossil "wood" of Arizona, wherever found. Throughout a million square miles, the arrow-head or knife or flesher that is not made of the omnipresent obsidian is from the butterfly chips of the Fossil Forest of Apache County, Arizona.

Once upon a time this forest was growing just here—with the trifling difference that it was about two miles higher in the air. It was a Mesozoic forest beside which the tallest woods of Maine or Michigan would look like underbrush —we have some of its trees still, which stood 240 feet tall. We can measure them to-day in eternal stone. They were mostly conifers; but there were also willows, cottonwoods, and other decidu-

ous trees of two or three sorts, which we can identify still by their unmistakable cleavage. The State of Rhode Island contains only eight hundred thousand acres; the Petrified Forest of Arizona is uncovered for at least half that area; and very likely in its entirety it would have blanketed "Little Rhody" altogether!

Millions of years before the petrified forests of the Yellowstone and of Wyoming were transmuted from trees to stone, the great forest of Arizona was promoted to immortality—and virtually all together. Nothing is more certain than that these trees did not starve to death with encroaching drought; equally, that they were not submerged alive, and left to rot and fall as pine-trees do in reservoirs and mill-ponds. No, this innumerable host of giants went down, as it were at once, swath by swath, before the scythe of some inconceivable cataclysm. Not by an avalanche of water, nor yet by a cyclone, else they would have been huddled and "lodged" and "jammed." Equally, they could not have perished and fallen slowly in a rising sea. They fell in an orderly fashion, their heads generally toward the south. I can conceive of but one power that could have mowed down that mighty timber, so orderly and with such fixed orientation—an earthquake of unparalleled magnitude, traveling southward from the crest of the continent—mayhap the same

earth-racking wave that first split the cañons of the Colorado to an "opener" for the plow of erosion.

Anyhow, these centuried giants laid them down; and Poet Nature set to work to embalm them before they could decay. That whole great area was submerged with infinite deliberation beneath some gentle sea whose boiling mineral springs and slow-building sediments began a transmutation far worthier than the alchemists dreamed of. Down and down sank the plateau; deeper and deeper the fallen trees were buried. When the stupendous subsidences of the Jurassic period were done, and the vast later sediments of the Cretaceous era had washed down upon the smothered forest, it was buried mile-deep—Dana says to an average depth of nine thousand feet. In these deep bowels of the earth, the springs of sulphur, iron, copper, salt, the paste of chalcedony, the solutions of silica, were still boiling; and the pressure that would mash the ribs of a dreadnaught as an elephant stepping upon a gnat, injected these mineral waters into every fiber and cell of the one-time wood. Of course it went slowly—by ages—the pressure increasing only as the trunk hardened to resist. Else we should have "trees" nine feet in diameter and two hundred feet tall, "pressed" in the geologic book as flat as we press a fern in the family Bible. The

mineralization must have begun with the first coverlet of sediment. No mere wooden tree could withstand the impact of two miles of perpendicular stone to the square inch. We pygmies to-day "pickle" piles and railroad-ties—fill them with creosote under the inverse thrust of a vacuum. As agate to pine for hardness, as eons to weeks for duration, as gems to mud for beauty—so was nature's "pickling" to ours.

And then that other "undivided part-interest in Eternity," that unboundaried period which we are pleased to call the Tertiary age, and its vast emergencies of sunken, water-logged continents to God's sunlight, by an upheaval so judicious and so balanced that it did not ruffle the sedimentary blankets—nor the sheets or other bedclothes —of a sleeping world. And the forgotten forest came up from three miles below its miracle-working sea to three miles above it; but still cuddled under a mile or so of Cretaceous counterpanes.

And then, Erosion—the insatiate Moth of Geology—began to nibble at the bedclothes. Grain by slow grain, the sandstone resolved to sand again, and blanket after blanket found its way by particles to bed down, in the far Pacific, continents that yet shall be. Strata by the thousand feet in depth and by the thousand square miles in area were devoured away by that slow, im-

Sections of Agate tree-trunks

The Petrified Log Bridge

Courtesy Santa Fé Ry.

Characteristic fracture of petrified trees

placable tooth; and in the fullness of time—still far before Adam—the Mesozoic forest began to be uncovered here and there; and the process goes forever on.

But the great trees are many hundreds—perhaps some thousands—of feet lower now than where they stood and where they fell. As erosion has gnawed away their bed to lower and lower levels, they have subsided with it. The shales and marls and clay on which these giant logs lay have let them down and down, even as dwindling snow lowers a twig slowly to earth. No geological diagram was ever more explicitly drawn; for here we see the very thing in process; the weathered and melting clays upholding a ten-foot "log" on a slender pillar which it roofs from erosion. By and by the pillar will collapse, and the log will come down to the flat ground again, and another earth pillar will grow under it—and of course in this process many of the logs have been tumbled and jumbled, as well as fractured. They are cross-cut and fractured in almost perfect cross-sections. Even when the full stature of the two-hundred-foot tree is measurable upon the ground, it is rare to find twenty feet in a piece. The giant backbones are broken squarely—almost into vertebræ. Nothing is more obvious than that the fallen trees had acquired utter fossilization before their "resurrection." Anything retaining the merest

vestige of ligneous fiber could no more fracture thus squarely than a live hen could be cracked over your knee to a perfect cross-section, including the very halves of the feathers. The broken twigs and branches, the chips knocked from the agate trunks when they rolled or broke, all that wonderful rainbow mosaic which strews the ground, is of the same more than flinty hardness.

Among all these fallen giants, not the largest but the most famous is the one commonly known as the "Natural Bridge." This was a splendid conifer 150 feet high. Its trunk, now transmuted to agate and jasper, spans a ravine sixty feet wide and twenty feet deep—doubtless the only bridge of agate in the world. Within the last few years, a concrete pier has been built up under the center of the bridge as a precaution. This is a pity, for the sake of picturesqueness; but it would not do to take chances on a collapse of this unique marvel.

You can photograph yourself on the "Natural Bridge," or at the breech-block of "Dewey's Cannon," or in relation to other logs of agate. You can bring away the chips of a petrified rainbow, bark and iris and all—so they be not so large as to excite the watchful eye of Uncle Sam—which latter is unlikely; for one does not smuggle

very bulky sections of "wood" that weighs 165 pounds to the cubic foot.

But you can carry away—without offending the guardian or sagging your suit-case—a million tons of Memories.

CHAPTER X

THE SELF-CRUCIFIERS

A Passion Reality in New Mexico, Far Stranger Than the Famous Play of Oberammergau—Tortures of the Penitentes

PEOPLE travel from the ends of the earth to Oberammergau when Anton Lang as the *Christus* figures in the famous and dramatic Passion Play. But the drama of Oberammergau, though enacted every decade since 1633, and of deep religious fervor, is a mere play indeed, a thing of the stage, compared to what I—and many others—have seen in some wild corners of our own country. For this was no medieval spectacle, no stage make-believe. It was a *Passion Reality*—the crucifixion of a willing zealot, the self-torture of a score of his companions.

In the middle ages a penitential epidemic overran all Europe—a fever of self-whipping and other mortifications of the flesh. The Flagellants, as they were called, made great processions through the streets, lashing themselves with

scourges, or flogged themselves at home. Even kings caught the infection and belabored their own royal backs. It took centuries to eradicate altogether this strange custom.

The first I recall of it in the New World was when Juan de Oñate, the colonizer of New Mexico, was preparing in northern Mexico his remarkable expedition. Things were not going well, and it was felt that divine displeasure had marked them for some fault; and the first self-flagellation took place among these six hundred colonists. The practice never took root in Mexico; but in the remote wilderness of New Mexico, so many hundred desert leagues from any outer civilization, so ingrown with loneliness, the cult of the *Penitentes,* or Penitent Brothers, took root and throve for nearly three centuries. It far outgrew its parentage in its ingenuities of self-torture. It is the only place in the New World—perhaps in the world—where this penitential fanaticism reached actual crucifixion—and in New Mexico this crowning tragedy went on for many generations. Public opinion, and essentially the steady pressure of the Church—I have copies of archbishops' bulls excommunicating the Penitentes—have put an end to the crucifixions; but there are many remote corners of New Mexico where the forty days of Lent and the climax of Holy Week are still observed by the Penitentes, with ceremonies

which seem strange indeed in this age and country.

I shall never forget my first encounter with the Penitentes—and there are very good reasons why I should not. Among them is a bullet still lodged somewhere back in my throat. Another is that I secured the only photographs ever made of the Penitente ceremonials—good five by eight glass negatives, made with a great Dalmeyer lens and Prosch shutter—and with a battery of Colonel Colt's forty-four-caliber persuaders to back me up.

This was in San Mateo, New Mexico, in March, 1888. I had gone there to rest and recuperate with courtly Spanish friends, when I suffered a stroke of paralysis from overwork as city editor of the young and struggling "Los Angeles Times." One night, belated in the mountains, I was startled by the most fearsome sound I ever heard. The scream of the jaguar or the mountain lion, the Apache war-whoop, never unnerved me so much. You may laugh at me for being frightened at the simple whistle of a reed; but if ever you hear that unearthly ululation in a grim cañon of New Mexico, you too will shiver. The official *pitero* afterward taught me that simple air, and it is flat enough when whistled in your room; but blown from his shrieking, wailing reed, haunting the air for miles so that you cannot tell

© by Chas. F. Lummis

THE PENITENTE PROCESSION, SAN MATEO, N. M., 1888

whether it comes from above or below or either hand, it is as ill a sound as you will wish to hear.

When I got back to the ranch that night, I asked Don Amado what on earth was that unearthly *toó-whootle-tee-oó;* and that fine scholar (later Superintendent of Public Instruction of New Mexico) told me the story of the Penitentes. This was Monday of Holy Week, and they were making their nightly pilgrimages, carrying crosses and flogging their bare backs. On Holy Thursday and Good Friday I could see them. What, in daylight? Oh, yes; from their *morada* in the cañon, down to the *campo santo* in the little village and back, many times in the day. And on Friday they would crucify. *Crucify? Seguro que sí.* Hurrah! Then I will photograph them. Love of God, *amigo;* they will kill you if you attempt such a foolhardy thing! And no doubt they would—but lionlike Don Ireneo, Don Amado's brother, was not only loved but feared. There was no one in all that land of brave men who cared to stir him up; and Don Ireneo, with a stalwart peon, stood at my side on Holy Thursday, their six-shooters in hand; while my Colt's forty-four lay cocked on top of the camera box, and my one useful hand manipulated the shutter. That night we got a peace conference at the home of the famous old Indian-fighter, Colonel Manuel Chaves, whom all revered; and I effected a modus with the

Hermano Mayor (chief brother) of the Penitentes and his assistants. And next day, Good Friday, March 30, 1888, I photographed in peace the procession of the self-whippers, and the men bearing crosses thicker than their own bodies and three times as long. Then, forcing the hostile mob of onlookers back, the Hermano Mayor marked on the ground a place for my tripod; and there, from a few yards' distance, I photographed the crucifixion of an American citizen, glorying in his good fortune that the lot had fallen to him among his equally willing brethren. His identity was concealed by a black hangman's cap which covered his entire head; and his body was partly swathed in a sheet to hide certain telltale scars; but where his side was bare, the traditional wound had been inflicted, and a thin stream of blood two inches wide trickled to his feet.

With feet against the foot of the cross, his head also enveloped in a hangman's cap, and pillowed on a flat stone, lay another man, stripped to the waist; and under his back a pile as big as a sack of bran, of the bristling *entraña* or buckhorn cactus—the familiar, antlered cactus of the Southwest, whose woody stems, when cleaned of the pulp, are in great demand for canes, being latticed in artistic patterns. This *entraña* was also used in prehistoric times, as now, for a torch. This fanatic had been carrying this bundle of thousand-

© by Chas. F. Lummis

THE PENITENTE CRUCIFIXION, SAN MATEO, 1888

The black-hooded figure at the foot of the cross is lying on a bed of buckhorn cactus

needle cactus, cinched tight to his back with ropes, all day. His flesh was a perfect pincushion of the barbed thorns. One of them in your flesh is distracting; but to fanatic exaltation every agony is an added joy. That day, the daredevil Don Ireneo stood beside me at the *Calvario,* as the procession passed to the village. In a gully beside us a big *entraña* had been uprooted. As the self-whippers passed, their heavy scourges falling in sickening rhythm upon their bloody backs, he flung this twelve- or fifteen-pound mass into the procession. It hit one flagellant on the left shoulder—and *hung* there! The man never winced, did not lose the peculiar rhythmic step which is the accompaniment of the blows of the scourge, and gave no sign beyond a little lift of his eyelid in our direction.

I was first to bring the astonishing practices of the Penitentes to the notice of the world; and to this day no one else has ever succeeded in photographing their supreme rites. I have described them at length in a chapter in my book, "The Land of Poco Tiempo."

I have also, I think, the only genuine Penitente *disciplinas* (scourges) which have seen use in their grisly ceremonies. Brave young Lucario and I "burgled" the *morada* one night and made away with these priceless relics—rudely woven of the fibers of the Spanish bayonet. In the White

Mountains, forty years ago, I had fame as a long-distance runner; but no ten-mile trot there seemed half so long to me as did the hundred yards from the door of the *morada* up over the sandstone hogback at the rear. For as we emerged into the moonlight, the old Penitente down at the grist-mill turned loose with his Winchester—and he was a famous shot. One bullet cut my hat, and one caromed a sandstone splinter that pierced my calf.

The whips were dipped in a decoction of *romero,* which made them heavy and cutting. The blows in flagellation are not violent; but they are repeated hundreds of times in an afternoon; and the back of the flagellant becomes as one great beefsteak, with blood soaking his white cotton trousers to the heels.

The crucifixions continued in San Mateo and some other towns into the nineties. The carrying of crosses, and of cactus burdens, and the self-flagellation, are still practised in some of the remotest hamlets of New Mexico. There used to be also women Penitentes, but these gave up before the men did. They were wont to wind arms and legs with wire or ropes so tightly as to stop the circulation, drag crosses of crushing weight, and march in procession for miles with unstockinged feet, in shoes half filled with sharp stones.

Courtesy Santa Fé Ry.

NOT-SA-LID, THE "RAINBOW" NATURAL BRIDGE

Note horseman on top of arch

CHAPTER XI

THE GREATEST NATURAL BRIDGES

The Glorious Rainbow-Arch of Not-se-lid--Pine Creek's Mammoth Bridge, a Five-Acre Orchard on its Top; 500-foot Span

A THIRD of a century ago, when I wrote of the Southwest Wonderland, I used the word in the singular. But in 1909 Dr. Byron Cummings of the University of Utah (now of the University of Arizona), guided by the veteran frontiersman John Wetherill, discovered another "greatest." It is fair to say that there are *two* greatest natural bridges; for these two marvels—both in the Southwest—are so unlike one another that they can hardly be compared; and each is without any other known rival.

The new-found marvel of nature's architecture is far up by Navajo Mountain, by the Arizona-Utah boundary line, and on a tributary of the San Juan River. It is very difficult of access, but may be reached by way of Gallup to Ganado, Chin Lee, and Kayenta by automobile, and thence by trail. Theodore Roosevelt made the trip in 1913.

This arch of glory, 279 feet span and 309 feet high, is known as the Rainbow Natural Bridge, from its shape. The Navajo Indians, in whose country it lies, naturally revere this tremendous freak of nature, and call it Not-se-lid—meaning the same thing. It really resembles the arch of a bridge rather than a bridge entire; but there is no gainsaying its overwhelming majesty and beauty. As a Vision, no other bridge compares. Nor is any other so high. There are several other, and only less wonderful, natural bridges in that region.

For a century and more the world has known of the Natural Bridge in Virginia; and the story is familiar how the first and greatest of our Presidents, in the athletic vigor of his youth, climbed high and carved his name upon its cliff. A handsome and picturesque spot it is, too, and long familiar in the old steel-engravings and wood-cuts; but if a score like it were thrown together side by side they would not begin to make one of the Natural Bridge of Pine Creek, Arizona, on the western edge of the Tonto Basin, in the same general region as Montezuma's Well and Castle. It is truly entitled to rank with the great scenic wonders of America. Its vastness and the peculiarities of its "architecture" make it one of the most difficult objects at which camera was ever leveled. No photograph can give more than a hint

of its majesty; no combination of photographs more than a suggestion. There are pictures which do proximate justice to details of the Grand Cañon, the Yosemite, the Yellowstone, the Redwoods, Niagara; and the Rainbow Bridge is perfectly simple—but there never will be an adequate picture of the Natural Bridge on Pine Creek.

I have not been an immodest godfather to my discoveries, nor named peaks and cañons and ruins for my pride or my obligations. Aside from titles as "The Southwest," "The Enchanted Mesa," "The Sky City, Acoma," "The Stone Autograph Album," and the like, I have usually been content with local names. But reading proof on this new book I'm ashamed of one omission. For a third of a century I have been calling this the "Pine Creek Natural Bridge." That's no name for a wonder of the world! I have never been able to learn what the ancient Apaches called it who had here a fort and shrine, the Pinal Coyoteros. So, since I first made it known to the world, I am going to name it "this very now"—for its incomparable bulk and certain anatomies—"The Mammoth Natural Bridge."

The road from Camp Verde is an interesting one, crossing the great gorge of Fossil Creek, past lonely little cave-houses that look down the sheer cliffs to the still pools below. A few hundred yards below the crossing, great springs burst forth

in the cañon—springs so impregnated with mineral that they are constantly building great round basins for themselves and for a long distance flow down, bowl after bowl. There are many of these in the Southwest, but those of Fossil Creek build their basins of what looks crude Mexican onyx. The fact that these waters quickly coat twigs or other articles with layers of this beautiful mineral gives rise to the name of Fossil—almost as good as the "petrified spring," of which a New Mexico lady tells.

Through lonely Strawberry Valley, over the last divide into the extreme western edge of the picturesque Tonto Basin, down to the lonely Mormon settlement of Pine on the dry creek of the same name, the road winds. Leaving the creek altogether and taking to the hills among the tall pines, thence across a wild lava-strewn mesa, we come suddenly upon the brink of a striking cañon whose west wall is an unspeakably savage jumble of red granite crags; the east side a wooded but in most places impassably steep bluff. The creek has split through the ruddy granite to our right a wild narrow portal, below which widens an almost circular little valley half a mile across. Beyond this, the cañon pinches again and winds away by grim gorges to where the blue Mazatzals bar the horizon.

Clambering down the steep and sinuous trail,

among the chaparro and the huge flowering columns of the maguey, we come to Dave Gowan's cabin. They tell me the quaint, sincere old Scotch hermit, who wrought this little paradise from wilderness by force of the ax, is still there enjoying his homestead of 160 acres, which contains a farmlet not only as pretty as may be found, but unique in the world.

Taciturn at first, like all who have really learned the lessons of Out-of-Doors, Gowan greeted me in the old days with frontier frankness. He led the way out under his little bower of clematis, down the terraced vineyard, along the corn-field, and into the pretty young orchard of peach and apricot. Still no token of a bridge—nor even of a stream.

And on a sudden, between the very trees, we stand over a little water-worn hole and peer down into space. *We are on the bridge now! The orchard is on the bridge!* Do you know of any other fruit-trees that grow in so strange a garden? Of any other two-storied farm? The rock of the bridge is at this one point less than ten feet thick; and this odd little two-foot peep-hole, like a broken plank in the giant floor, was cut through by water.

"Wait," chuckles the hermit, his eyes twinkling at our wonder; "wait!" And he leads us a few rods onward, till we stand beside an old juniper

on the very brink of a terrific gorge. We are upon the south arch of the bridge, dizzily above the clear, noisy stream, looking down the savage cañon in whose wilds its silver thread is straightway lost to view. The "floor" of the bridge here, as we shall also find it at the north arch, has broken back and back toward its center, so that a bird's-eye view shows at each side of the bridge a deep bay.

Circling south along the southeast "pier," we start down a rugged, difficult, and at times dangerous trail. A projecting crag of the pier—destined to be a great obstacle, later, in our photographic attempts—shuts the bridge from view till we near the bottom of the gorge, and then it bursts upon us in sudden wonder. The hand of man never reared such an arch, nor ever shall rear, as the patient springs have gnawed here from eternal rock. Dark and stern, and fairly crushing in its immensity, towers that terrific arch of rounded limestone. The gorge is wild beyond telling, choked with giant boulders and somber evergreens and bristling cacti until it comes to the very jaws of that grim waterway, and there even vegetation seems to shrink back in awe. Now one begins to appreciate the magnitude of the bridge, a part of whose top holds a five-acre orchard. In its eternal shadow is room for an army.

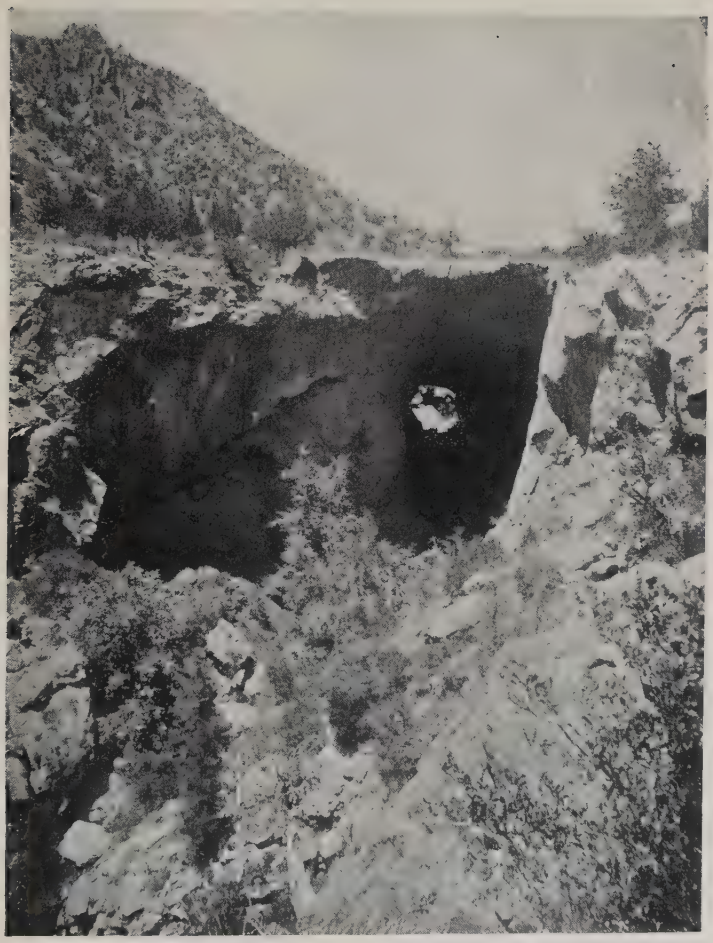


Photo by Chas. F. Lummis

THE "MAMMOTH" NATURAL BRIDGE

Pine Creek, Arizona, from down stream
A 5-acre orchard covers part of the top

The south arch, to which we have thus come, is the larger and in some respects the more imposing. From its top to the surface of the water is two hundred feet, and the pools are very deep. The span of the archway is over two hundred feet as we see it now from without; but we shall soon find it to be really very much greater. The groined limestone is smoothly rounded; and the fanciful waters seem to have had architectural training—for the roof is wonderfully rounded into three stupendous domes, each flanked by noble flying buttresses of startling symmetry. A photograph of that three-domed roof would be a treasure; but it is among the many impossibilities of this baffling place.

Climbing up the water-worn bed-rock into the cool dusk of the bridge—for the sun has never seen one tenth of the way through this vast tunnel—we stand under the first dome. Away up to our left, on the west side of the stream, there is a shelf at the top of an impressive wall; and mounting by ledges and a tall ladder, we find this little shelf to be an enormous level floor, running back three hundred feet west. Here, then, we see the extreme span of the bridge, over five hundred feet; and here we find the central pier—a stupendous column from this floor to the vaulted roof, a column more than one hundred feet in circumference. How strange that the blind waters which

ate out all the rest of this vast chamber should have left that one necessary pillar to support the roof!

About midway of the stream's course under the bridge is the Great Basin—a pool which would be a wonder anywhere. It is a solid rock bowl, about seventy-five feet in diameter and ninety in depth, and so transparent that a white stone rolled down the strange natural trough more than one hundred feet long in the side of the basin can be seen in all its bubbling course to the far bottom of that chilly pool. Fifty of the beautiful "Basin" in the Franconia Notch would not make one of this; and the noble "Pool" itself, in the same mountain paradise, does not match it. The clear stream pours into this basin in a white fall of thirty feet; but, dwarfed by its giant company, the fall seems petty.

The north arch—to which we may come under the bridge by a ticklish climb around the Great Basin—is less regular but not less picturesque than the south arch. It is more rugged in contour, and its buttresses, instead of being smooth, are wrought in fantastic figures, while strange stalactites fringe its top and sides.

And now for the comparative magnitude of this greatest of natural bridges. Its actual span is more than five hundred feet—that is, about five times the span of the Virginia bridge. Its

Photo by Chas. F. Lummis

THE "MAMMOTH" NATURAL BRIDGE, WITHIN

height from floor of bridge to surface of water is forty feet less than its small brother's; but to the bottom of erosion—the proper measurement, of course—it is fifty feet greater. But in its breadth —that is, measurement up and down stream—it is over *six hundred feet,* or more than twelve times as wide as the Virginia bridge! So you see one could carve, from this almost unknown wonder, something like *sixty* bridges, each equal to the greatest curiosity of Virginia!

Compared with Not-se-lid, the Mammoth Bridge is nineteen feet lower, over 220 feet greater span, and about three times as "wide" up-and-down stream. So you understand why I say they cannot be compared, and that *Both* are Greatest! Not-se-lid is by far the greater as a picture—a very Apocalypse of simplest grandeur. The Mammoth Bridge is less a picture, more a study, an exploration, a Book.

In these vast proportions lies the impossibility of adequately photographing Mammoth bridge. From no point can the eye take it in at once. It is a wonder-book which must be turned leaf by leaf. Miles of walking are necessary before one really understands. From the bed of the stream half the dignity of the arch is lost behind the boulders, if one gets off far enough to command the opening at a glance. If near enough for an unobstructed view, then the vast arch so

overshadows us that neither eye nor lens can grasp it all. And the wing-cliff which projects from the southeast pier—as you may see in the picture of the south arch—makes it almost impossible to find a point, at sufficient distance for photographing, whence one can see clear through the bridge. "Can't be done!" reiterated the old hermit. "Been lots of professionals here from Phœnix with their machines, and all they could get was pictures that look like caves. You can't show through with a picture, to prove it 's a *bridge,* at all!"

But it *can* be done; and being bound to show all that photography can show of this wonder, I did it. It cost about twenty-four solid hours of painful and perilous climbing and reconnaissance, a good deal of blood-tribute to sharp rocks and savage cactus—to whose inhospitable thorns it was necessary to cling to get footing on some of those precipices—and the camera did its work from some of the dizziest perches that tripod ever had; but here are the pictures which *do* "show through that it 's a bridge." When you look at the little far circle of light, and realize that it is two hundred feet in diameter, you will begin to feel the distance from south arch to north arch under that terrific rock roof.

Following up the wild bottom of the cañon from the north arch, around gigantic boulders

and under hanging cliffs, we find many other interesting things. Directly we come to the "First Tree"—one of the very largest sycamores in the United States. The cañon here is strangely picturesque. Its west wall is fifteen hundred feet high, a wilderness of splintered red granite, not perpendicular, but absolutely unscalable. The east wall is of gray limestone, perpendicular, often overhanging, but nowhere more than two hundred feet high. Gowan's farm comes to the very trees that lean over its brink, and he now shows us the "lower story" of his unique homestead. Not only does his orchard stand two hundred feet in air, with room beneath for some of the largest buildings in America, but the rest of his farm is as "up-stairs," though in a different way. This fantastic east wall of the cañon is fairly honeycombed with caves, whose ghostly chambers, peopled with white visions in stone, run back unknown miles. His whole farm, his very house, is undermined by them. The old hermit has made many journeys of exploration in these caves, but has merely learned the beginning of their labyrinth. It was in one of these subterranean tours that he was lost. His torches gave out, food he had none, and for three days he faced a frightful death—there, close to his own cottage, perhaps not a hundred feet from it. From several of these caves issue fine rivulets, which coat

with limestone whatever comes in their way. It is an odd fact that Pine Creek as a visible stream starts at and depends upon Gowan's farm. It is nominally Pine Creek for ten miles above, but is only a dry wash, except in time of rains; but the strong, clear stream which pours from under the south arch of the bridge is large and permanent.

How was the bridge built? By the same peerless architect that builded the greatest wonders of the earth—the architect of the Grand Cañon and the Yellowstone, and the Yosemite—by water. It seems probable that Gowan's little round valley was once a lake, dammed by ledges at the south end which have since disappeared. The rich alluvial soil found only here would indicate that. At all events, here was once a great round blanket of limestone, many hundred feet thick, laid down flat upon the giant lap of the granite. From unknown storage-caverns of the Mogollon watershed subterranean passages led hither, and through them flowed strong springs. In time the water—whether stored in a lake upon this limestone bench, or merely flowing over—began to burrow "short cuts" through it, as water always will in limerock. As the west side of the valley was lowest, there toiled the greatest throng of water-workmen. A little fellow no bigger than your finger first made passage for himself through

what is now the Natural Bridge. And he called his brother waters, and they crowded in after him; and each as he passed gnawed with his soft but tireless teeth at the stone, and carried his mouthful of lime-dust off down the valley, chuckling as he ran. And slowly so the tunnel grew. If men were there then, the life of generations would have seen no change; but time is the most abundant thing in creation (except for *us*); and time was there, and now the dark winding burrow of a rivulet has become one of the noblest passageways on earth. The hermit who owns it was born in Scotland but had grown American in every fiber. He wished to dedicate his homestead to the Government, and to have it accepted, made accessible, and cared for as a national monument—as it is most worthy to be.

I often wonder if there were not great poets among the Indians of the old days. Indeed, I am sure there must have been, in the race which invented the poetry of the folk-lore I have gathered among them. And when one sees amid what noblest works of nature they lived in those days, one may well believe that bronze Homers are buried in that buried past. Science has at last learned that there can be no real study of history without consideration of physical geography as a chief factor. A race grows into character ac-

cording to the country it inhabits; and the utmost savage would grow (in centuries) to be a different man when he had removed from the dull Plains to the Grand Cañon, the San Juan, Acoma, the Verde cliffs, the Tonto Basin, or any other spot where the Pueblos lived five hundred years ago. For here at the bridge they were, too. They tilled Gowan's two-story farm, and dwelt in the caves of his basement, perhaps while his ancestors were yet naked savages in old Scotia. Their rude implements and fabrics are everywhere; and among many valuable relics from that region I brought home a fetish [1] which is quite priceless—a symbol

THE EAGLE FETISH, ACTUAL SIZE

of the eagle holding a rattlesnake in his talons, carved from an unknown stone which baffles the file. It is the only authentic link I know of between the Pueblo or Apache and the Aztec cultures, despite the innumerable ignorant fables of Aztec occupancy in our Southwest. It undoubtedly came up, to where I found it, by the ancient barter from tribe to tribe. But here it is to-day—

[1] *Not* an idol, but the sacred symbol of some divine power.

perhaps the oldest sketch of the emblem of the modern United States of Mexico: the eagle and the rattlesnake. I made it the device on the seal of the Southwest Museum, when I founded that institution in Los Angeles, in 1907; with the legend "Mañana Flor de Sus Ayeres"—Tomorrow shall be the Flower of all its Yesterdays.

There are countless minor natural bridges in the Southwest, including a fine one in the labyrinthine cliffs of Acoma. There is a curious natural bridge near Fort Defiance, New Mexico. It has an arch of only about sixty feet, but is remarkable because it was carved not by water but by sand-laden winds, as are some of the most beautiful and fantastic erosions of the dry Southwest.

CHAPTER XII

THE DANCE OF THE DEADLY SNAKES

The Famed Snake-charmers of India Outdone—Dancers Holding Active Rattlesnakes Between Their Teeth—A Prayer for Rain

FOR 380 years mystery and romance have clung about the province of Tusayan, when Coronado first heard in Zuñi of seven towns to the north and sent Pedro de Tobar (or Tovar) for whom a famous hotel is named to-day, to explore it. Here the Spaniards first heard of the Grand Cañon of the Colorado River; and by these same villages a little later came Cárdenas to the discovery of that chiefest wonder of the world. In 1583 Antonio de Espejo came up from Zuñi to these villages of "Hope Mosoze," as he called them. In November, 1598, Juan de Oñate, the colonizer of New Mexico, marched up to these distant cliff-built towns and received their oath of allegiance and vassalage to Spain. In 1629 missions were established by the Franciscans at five of the villages, but the work of these devoted missionaries was not so successful here as in the

Photo by Chas. F. Lummis

MOQUI—THE "FIRST MESA," FROM THE NORTH

With its three pueblos—Walpi at right

Rio Grande pueblos; and in the Great Pueblo Rebellion of 1680 the four missionaries were killed and their churches destroyed. They were never restored except at the pueblo Awatobi; and the other villages were so much enraged at this that in 1700 they fell upon Awatobi at night and killed most of its people. This province of Tusayan has been known for more than two centuries as the Moqui Pueblos—the name by which these people were known to other tribes, and to the Spanish historians, and to our own travelers. Within a few years the Bureau of Ethnology has made them widely known as the Hopi, on the ground that this was their own name for themselves, meaning "People of Peace." As a matter of fact, this is not their own name for themselves, but a contraction of it—"Hopitu-shinumu," whereas Moqui is an alien term of unknown meaning.

Hopi and Peaceful People are all very well; though their record for peace is not nearly so good as that of the other Pueblos. But I prefer the historic term. The Bureau does not call the Navajos by their own name, which is "Din-né," meaning "The People." It does not call the Pueblos by any of their own names for themselves, but by the historic Spanish collective name. For that matter, few of the names it gives to our Indian tribes are those which are applied by themselves; and this special tendency for the "Hopi" arises

perhaps from the same amateur source as the substitution of "Kiva" for "Estufa."

These strange remote cliff-perched pueblos of Moqui rejoice in curious names—Walpi, Mishongnovi, Shongopovi, Sichomovi, Shipaulovi, Oraibi, and Hano. The total population of these quaint villages is less than two thousand. The most remote from civilization of all the pueblos, least affected by the Spanish influence which so wonderfully covered an enormous area of the Southwest, and least touched by our modern progress, the Moquis retain very largely their aboriginal culture. Their language is different from that of any of the other pueblos; except that in the village of Tehua on the first mesa the people speak the language of the Tehuas on the Rio Grande, whence they came as refugees after the Great Pueblo Rebellion in 1680. They make characteristic baskets and notable pottery; and one woman, Nam-pé-ya, is famous the world over for the fine art of her pottery. The Moquis are the best weavers in America except the Navajos; and their *mantas* (the characteristic blue-black woolen blanket which, sewed down one side, forms the characteristic dress of Pueblo women) and their dance girdles are so famous that the Indians of the Rio Grande Valley have for centuries traveled three hundred miles on foot or by burro to trade the product of their farms for the long-wearing

products of the rude home-made looms of the Moqui.

It is in these lonely cliff-perched villages, overlooking the awesome waste of northern Arizona, that the most astounding barbaric ceremonial is held that civilized eyes have ever looked upon—the Moqui snake-dance. It is of great antiquity; and repulsive as its details seem to some of us, it is instinct with the deepest reverential spirit.

The snake is an object of great respect among all primitive people—in fact in our own Bible, the serpent appears in the very first scene. I have written elsewhere about the enormous lore which has grown up about the snake. The Pueblos often keep about their houses an esteemed and harmless gopher-snake, five or six feet long, as a mouse-trap; and these noiseless mousers are far more effective than a cat; they do not have to wait at the mouth of a hole for Shee-id-deh to come out—they simply follow him down to his ultimate retreat. Wise people among us protect the harmless snakes, which destroy vermin that otherwise would be an intolerable pest.

But while all snakes are to be treated well, the Pueblo holds the rattlesnake actually sacred. It is, except the rare Pichu-cuate (a real asp), the only venomous reptile in the Southwest, and is the only snake dignified by a place among "The Trues." Ch'a-ra-rá-de is not really worshiped

by the Pueblos; but they hold it one of the sacred animals which are useful to "The Trues," and credited with wonderful powers. Up to a generation ago it played in the marvelously complicated civilization of these people a much more important part than it does to-day. In days of old, every Pueblo town maintained a huge rattlesnake, which was kept in its own sacred room and fed with great solemnity once a year. My own pueblo of Isleta used to support a sacred rattler in a volcanic cave of the Cerro del Aire; and there was great consternation when it escaped. Old men have told me that it was nearly as large around as my body, which may be discounted. But I myself saw a sacred snake that escaped from Acoma and was killed by an American teamster; and it was as large as the thickest part of my thigh.

There used to be gruesome stories of human sacrifices to these sacred rattlers—even that a baby was chosen by lot from the pueblo once a year to be fed to the snake. That of course was a foolish fable. The Pueblos never practised human sacrifice in any form, even in prehistoric times; and the very grandfather of all the rattlesnakes could no more swallow the smallest baby than he could fly.

The cult of the rattlesnake has died out in late years in all the pueblos of New Mexico, but it per-

Photo by A. C. Vroman

A MOQUI MADONNA

The basket plaques are of her weaving

sists strong as ever in the towns of Moqui; whence perhaps it first came to the other pueblos, since the snake plays a different and more important part in the Hopi mythology. Every second year, when the August moon reaches a certain stage (generally about the twentieth of the month), the weird ceremony of the snake-dance is performed in the pueblos of Walpi and four others by the Snake and Antelope fraternities. They have conducted secret ceremonies in the underground *estufas* for eight days, fasting, purifying themselves, drinking the bitter tea of Máh-que-be, a secret herb which is supposed to give them immunity from snake poisoning. Six days before the public dance they go forth, descend their cliff, and search to the "four quarters of the world" (east, north, west, and south, in that sacred and inviolable order). When a rattlesnake is found the hunter tickles it with the "snake whip"—a bunch of eagle feathers—until it straightens from its coil and begins to run; then he snatches it up by the back of the neck, and puts it into his sack. A large number of snakes are captured, including bull-snakes and king-snakes, but overwhelmingly rattlers. The snake priest makes a wonderfully complicated and artistic sand altar on the floor of the *kiva;* and here the snakes are all washed and cleansed with great solemnity. Their fangs are not extracted, of course. A

rattler has a whole series of these poison-lances, one behind the other, to develop if their front fangs are broken.

In a dance I saw in 1891 more than one hundred snakes were used, by count. Of these, about sixty-five were rattlesnakes. Those were the days when few outsiders came, and I stood within six feet of the circle. One Snake man had in his mouth a very "chunky" rattler fully five feet in length. It was a difficult mouthful; and as the snake moved uneasily, it slid imperceptibly along his teeth. Just as he came close to me, the dancer closed his jaw a little too tight, to stop the escape of his snake; and the snake, being thus as well braced as by a coil, and having worked his head ten or twelve inches beyond his captor's jaws, promptly turned and smote him upon the right cheek. The dancer involuntarily opened his jaws, and the snake hung clear to his feet, hooked to his cheek by its recurving fangs. His Antelope partner quickly "unhung" the snake, with the exact motion of unhooking a coat off its hook, and tossed it upon the ground; and the pair danced on as if nothing had happened. I watched these two particularly, thinking to see the bitten man swell up and reel; though I felt sure he would not die, knowing as I did the notorious immunity given by their secret treatments. But the violent exercise of the dance kept on for nearly an hour; and

Photo by Carl Oscar Borg

ANTELOPE MAN AND SNAKE MAN

Latter with a rattler in his teeth

the "victim" showed no ill effects whatever. Another Snake man, a little further from me but plainly seen, was bitten on the back of the hand.

The place where the dance is held in Walpi is a small open court, with the three-story houses crowding it on the west, and the brink of the cliff bounding it on the east. Several sacred rooms, hollowed from the rock, are along this court, and the tall ladders which lead into them are visible in the picture. At the south end of the court stands the sacred dance-rock—a natural pillar, about fourteen feet high, left by water-wearing upon the rock floor of the mesa's top. Midway from this to the north end of the court has been constructed the *kee-si,* or sacred booth of cottonwood branches, its opening closed by a curtain. Just in front of this a shallow cavity has been dug, and then covered with a strong and ancient plank with a hole in one side. This covered cavity represents Shi-pa-pu, the great Black Lake of Tears—a name so sacred that few Indians will speak it aloud—whence, according to the common belief of all Southwestern tribes, the human race first came.

On the day of the dance the captain of the Snake men places all the snakes in a large buckskin bag and deposits this in the booth. All the other active participants are still in their kiva, going through their mysterious preparations.

Just before sunset is the invariable time for the dance.

Long before the hour, the housetops and the edges of the court are lined with an expectant throng of spectators: the earnest Moquis, a goodly representation of the Navajos, whose reservation lies just east, and of late years many whites. At about half-past five in the afternoon the twenty men of the Antelope Order emerge from their own special room in single file, march thrice around the court, and go through certain sacred ceremonies in front of the booth. Here their captain sprinkles them with a consecrated fluid from the tip of an eagle feather. For a few moments they dance and shake their *guajes* (ceremonial rattles made of gourds) in front of the booth; and then they are ranged beside it, with their backs against the wall of the houses. Among them are the youngsters that day admitted to the order in which they will thenceforward receive lifelong training—dimpled tots of from four to seven years old, who look extremely "cunning" in their picturesque regimentals.

Now all is ready; and in a moment a buzz in the crowd announces the coming of the seventeen priests of the Snake Order through the roofed alley just south of the dance-rock. These seventeen enter the court in single file at a rapid gait, and make the circuit of the court four times,

stamping hard with the right foot upon the sacred plank that covers Shi-pa-pu as they pass in front of the booth. This is to let the *cachinas* (spirits, or divinities) know that the dancers are now presenting their prayers.

When the captain of the Snake Order reaches the booth, on the fourth circuit, the procession halts. The captain kneels in front of the booth, thrusts his right arm behind the curtain, unties the sack, and in a moment draws out a big, squirming rattlesnake. This he holds with his teeth about six inches back of the ugly triangular head, and then he rises erect. The captain of the Antelope Order steps forward and puts his left arm around the Snake captain's neck, while with the snake-whip in his right hand he "smooths" the writhing reptile. The two start forward in the peculiar hippety-hop, hop, hippety-hop of all Pueblo dances; the next Snake priest draws forth a snake from the booth, and is joined by the next Antelope man as partner; and so on, until each of the Snake men is dancing with a deadly snake in his mouth, and an Antelope man accompanying him.

The dancers hop in pairs thus from the booth to the dance-rock, thence north, and circle toward the booth again. When they reach a certain point, which completes about three quarters of the circle, each Snake man gives his head a sharp

snap to the left, and thereby throws his snake to the rocky floor of the court inside the ring of dancers, and dances on to the booth again, to extract a fresh snake and make another round.

There are three more Antelope men than Snake men, and these three have no partners in the dance, but are intrusted with the duty of gathering up the snakes thus set free and putting them back into the booth. The snakes sometimes run to the crowd—a ticklish affair for those jammed upon the very brink of the precipice. In case the snakes run, the three official gatherers snatch them up without ado; but if they coil and show fight, these Antelope men tickle them with the snake-whips until they uncoil and try to glide away, and then seize them with the rapidity of lightning. Frequently these gatherers have five or six snakes in their hands at once. The reptiles are as deadly as ever; not one has had its fangs extracted.[1]

I never knew one of them to be seriously affected by a rattlesnake's bite. They pay no attention to the (to others) deadly stroke of that hideous mouth, which opens flat as a palm and smites exactly like one, but dance and sing in earnest unconcern. There is in existence one

[1] Of course a snake cannot strike without a leverage; the coil gives him this base—or if you step on him, it amounts to the same thing.

Photo by Ben Wittick, circa 1884

THE MOQUI SNAKE DANCE AS IT WAS

photograph which clearly shows the dancers with the snakes in their mouths, and only one. Beginning so late, and in the deep shadow of the tall houses, it is almost impossible for the dance to be photographed at all; but one year a dense white cloud came up just before sunset and like a great reflector, threw a light into that dark corner, and noted old Ben Wittick got the only perfect picture extant of the snake-dance. I have made pictures which do show the snakes; but they are not handsome pictures of the dance. The make-up of the dancers makes photography still harder. Their faces are painted black to the mouth, and white from there to the neck. The bodies, naked to the waist, are painted a dark lake-red. They wear curious dancing-skirts to the knee, with beautiful fox-skins dangling behind, but nothing on their legs except rattles and sacred twigs at the ankle.

At last all rush together at the foot of the dance-rock and throw all their snakes into a horrid heap of threatening heads and buzzing tails. I have seen that hillock of rattlesnakes a foot high and four feet across. For a moment the dancers leap about the writhing pile, while the sacred corn meal is sprinkled. Then they thrust each an arm into that squirming mass, grasp a number of snakes, and go running at top speed to the four points of the compass. Reaching the bot-

tom of the great mesa (Walpi, where the chief snake-dance is held, is 660 feet above the plain), they release the unharmed serpents.

These astounding rites last from half an hour to an hour, and end only when the hot sun has fallen behind the bald western desert. Then the dancers go to their sacred purification with the secret herb; and the awed onlookers scatter to their quaint homes, rejoicing at the successful conclusion of the most important of all the public ceremonials of Moqui. It is believed by the Hopi that the rattlesnake was one of their first ancestors—the son of the Moqui Adam and Eve—and they have a very long and complicated folk-story about it. The snake-dance is therefore—among other superstitious aims—designed to please their divinities.

In the "neck" or "saddle" which connects the first of the Moqui "islands" of rock with the main table-land is a shrine of great importance. It is a little inclosure of slabs of stone surrounding a large stone fetish which has been carved into a conventional representation of the sacred snake. In two small natural cavities of the dance-rock are also kept other large fetishes—both the latter being limestone concretions of peculiar shape.

This snake-dance seems to have been common to all the Pueblo towns in ancient times. Espejo saw it in Acoma in 1581; and there are to this day in other towns customs which are apparent sur-

Photo by A. C. Vroman

A MOQUI COIFFURE—DOING UP THE VIRGIN SQUASH-BLOSSOM

vivals of this strange ceremony. In Isleta there are still men who have "the power of snakes," and know how to charm them by putting the sacred corn meal and corn pollen on their heads—a practice which figures extensively in their folklore.

The Moquis make great numbers of remarkable-looking dolls for their children to play with; and in nearly every house some of these strange effigies are to be seen. They are toys for the youngsters, but not merely toys; they are also a sort of kindergarten course. They are called *cachinas,* and are supposed to represent the spirits in which the Moqueños believe. They are very clever representations of the outlandish figures of the masked men who take part in many ceremonial dances—these maskers, of course, being also supposed to look like the unseen but potent spirits. And so a Moqui child very soon learns what the various spirits look like.

One of the oddities which a stranger will first observe in Moqui is the fashion in which the women dress their hair. The young girls have their abundant black locks done up in two large and very peculiar coils, one behind each ear. These coils stand far out from the head, like huge black buttons, and give a startling appearance to the wearer. Sometimes you would fancy that she has a pair of short, curving horns. But on close inspection one of these coils is found to resemble

nothing else so much as a black squash-blossom in its full bloom—and that is exactly what it is designed to typify. Among the Hopi the squash-blossom is the emblem of womanhood. Before marriage a girl must always wear her hair thus; but after marriage she must dress it in two pendent rolls, one by each ear. These rolls are supposed to resemble—and do resemble—the long, closed squash-blossom.

How Remote they seem—farther in centuries than their cliff-perched home in miles from our Civilization! Back to the time of Abraham and the Patriarchal simplicities and sincerities—back even farther, to primitive Sanity! No woman of all the 26 Pueblo towns ever envied her neighbor's dress, nor feared her own was out of style. No Pueblo woman ever made her hair or her dress provocative, a challenge, a bait, a temptation—nor as a grandmother disported herself as she were a maid. Such mental disorders as crinolines, bustles, Grecian Bends, French heels, Marcel waves, never maggoted in her serene, secure, *ewig-weibliche* head—nor change of Fashion. Before Columbus was born, these First American matrons had evolved a highly becoming coiffure, a costume artistic, picturesque, hygienic, Comfortable—and they have clung to them sedately and Quakerly ever since.

CHAPTER XIII

BEGGING THE BEAR'S PARDON

Navajo Hatred of Snakes—No Fish nor Rabbits on Their Menu, but Good Fat Prairie-Dog—The Honorable Bear

THE Navajo Indians, next-door neighbors of the Moquis, have an entirely different point of view from them. They will not touch any snake under any circumstances. So extreme are their prejudices that one of their most skilful silversmiths was beaten nearly to death by his fellows, long ago, for making to my order a silver bracelet in the semblance of a rattlesnake; and the obnoxious emblem was destroyed by the raiders, along with the offender's hut. Once, in my early innocence, I lost an important friendship. I had cultivated very good relations with a fine Navajo living on the mesas back of Manuelito. One day I caught an excellent rattlesnake, who had just come out in his new suit and was shiny as a string of jewels; had skinned him with great care, and spread the skin to dry upon newspapers lapped one after the other so that the wet flesh surface

of the skin stuck tightly; and had rolled this all up—when my Navajo friend came riding up the rocky slope on his sure-footed pony. Without the remotest consciousness of my hideous offense, I greeted him and held out my hand to shake. But his keen nose caught the snake smell; and with a quick look he detected the peeled serpent tossed under a rock; and I have never faced another such look of scorn as came over his face as he threw back his right hand and spurred his horse away. I could never make it up with him. If by chance he had shaken my polluted hand, I do not suppose he could have ever got purified to his own satisfaction.

Living almost wholly upon game as they do, the Navajos cannot be prevailed upon to taste either fish or rabbit. I have known some very ludicrous things to happen when meanly mischievous Americans deluded Navajos into eating either of these abhorred dishes; and sometimes there have been very serious retaliations for the ill-mannered joke. Rabbits are wonderfully numerous in the Navajo country, where they are molested only by feathered and four-footed enemies; but the Indian who would fight to the death sooner than touch a delicious rabbit stew is greedily fond of the fat and querulous prairie-dog. The whole region abounds in "dog-towns," and they are frequently besieged by their swarthy foes. A Navajo will stick a bit

of mirror in the entrance of a burrow, and lie behind the little mound all day, if need be, to secure the coveted prize. When Mr. Tusa ventures from his bedroom, deep underground, he sees a familiar image mocking him at the front door; and when he hurries out to confront this impudent intruder, whiz! goes a chalcedony-tipped arrow through him, pinning him to the ground so that he cannot tumble back into his home, as he has a wonderful faculty for doing even in death; or a dark hand darts from behind like lightning, seizes his chunky neck safely beyond the reach of his chisel-shaped teeth, and breaks his spine with one swift snap.

But when the summer rains come, then is woe indeed to the populous communities of these ludicrous little rodents. As soon as the downpour begins, every adjacent Navajo between the ages of three and ninety repairs to the *tusa* village. They bring rude hoes, sharpened sticks, and knives, and every one who is able to dig at all falls to work, unmindful of the drenching. In a very short time a lot of little trenches are dug, so as to lead the storm water to the mouths of as many burrows as possible; and soon a little stream is pouring down each.

"Mercy!" says Mr. Tusa to his fat wife and half-dozen chubby youngsters; "I wish we could elect aldermen that would attend to the drainage

of this town! It 's a shame to have our cellars flooded like this!" And out he pops to see what can be done. The only thing he can do is to swell the sad heap of his fellow-citizens, over which strange two-footed babies, far bigger than his, are shouting in wild glee. Such a rain-hunt often nets the Navajos many hundred pounds of prairie-dogs; and then there is feasting for many a day in the rude, cold *hogans,* or huts of sticks and dirt, which are the only habitation of these Indians.

With the Pueblos, the mountain lion or cougar is the king of beasts—following our civilized idea very closely; but with the Navajos the bear holds first rank. He is not only the greatest, wisest, and most powerful of brutes, but even surpasses man! The Navajo is a brave and skilled warrior and would not fear the bear for its deadly teeth and claws, but of its supposed supernatural powers he is in mortal dread. I have offered a Navajo shepherd, who had accidentally discovered a bear's cave, twenty dollars to show it to me, or even to tell me in what cañon it lay; but he refused, in a manner and with words which showed me that if I found the cave I would be in danger from more than the bear. The Indian was a very good friend of mine, too; but he was sure that if he were even the indirect cause of any harm to the bear, the bear would know it and kill him and all his family. And so even my princely offer

was no inducement to a man who was working hard for five dollars a month.

There is only one case in which the Navajos will meddle with a bear. That is when he has killed a Navajo, and the Indians know exactly which bear is the murderer. Then a strong armed party, headed by the proper religious officers (medicine-men), proceed to the cave of the bear. Halting a short distance in front of the den, they go through a strange service of apology, which to us would seem entirely grotesque, but which to them is unutterably solemn. The praises of the bear, commander of beasts, are loudly sung, and his pardon is humbly invoked for the unpleasant deed to which they are now driven. Having duly apologized beforehand, they proceed as best they may to kill the bear, and then go home to fast and purify themselves. This aboriginal greeting, "I beg your pardon, and hope you will bear no resentment against me, but I have come to kill you," is quite as funny as the old farmer I used to know in New Hampshire, who was none too polite to his wife, but always addressed his oxen thus: "Now, if you please, whoa haish, Bary! Also Bonny! There! Thank you!"

The Navajos also make frequent prayers and sacrifices to the bear. Under no circumstances will a Navajo touch even the skin of a bear. The equally dangerous mountain lion he hunts eagerly, and its beautiful tawny hide is his proudest trophy

outside of war, and the costliest material for his quivers, bow cases, and rifle sheaths. Nor will he touch a coyote.

A Navajo will never enter a house in which death has occurred, and his wild domain is full of huts abandoned forever. Nor after he is married dare he ever see his wife's mother; and if by any evil chance he happens to catch a glimpse of her, it takes a vast amount of fasting and prayer before he feels secure from dangerous results. The grayest and most dignified chief is not above walking backward, running like a scared boy, or hiding his head in his blanket, to avoid the dreaded sight.

Feathers figure very prominently in the religious customs of most aborigines, and remarkably so in the Southwest. Among Navajos and Pueblos alike these plume symbols are of the utmost efficacy for good or bad. They are part of almost every ceremonial of the infinite superstitions of these tribes. Any white or bright-hued plume is of good omen—"good medicine," as the Indian puts it. The gay feathers of the parrot are particularly valuable, and some dances cannot be held without them, though the Indians have to travel hundreds of miles into Mexico to get them. A peacock is harder to keep in the vicinity of Indians than the finest horse; those brilliant plumes are too tempting.

Eagle feathers are of sovereign value; and in many of the pueblos great dark captive eagles are kept to furnish the coveted articles for most important occasions. If the bird of freedom were suddenly exterminated now, the whole Indian economy would come to a standstill. No witches could be exorcised, nor sickness cured, nor much of anything else accomplished.

Dark feathers, and those in particular of the owl, buzzard, woodpecker, and raven, are unspeakably accursed. No one will touch them except those who "have the evil road"—that is, are witches—and any Indian found with them in his or her possession would be officially tried and officially put to death. Such feathers are used only in secret by those who wish to kill or harm an enemy, in whose path they are laid with wicked wishes that ill fortune may follow. I have more to say of witches in another chapter.

How many who have read of the "prayer-wheels" of Burma and the paper prayers of the Chinese know that there is a mechanical prayer used by thousands of people in the United States? The Pueblo "prayer-stick" is quite as curious a device as those of the heathen Orient; and the feather is the chief part of it.

Prowling in sheltered ravines about any Pueblo town, the curiosity-seeker will find, stuck in the ground, carefully whittled sticks, each with a tuft

of downy feathers (generally white) bound at the top.

Each of these sticks is a prayer—and none the less earnest and sincere because so childishly expressed. Around the remote pueblo of Zuñi I have counted more than three thousand of these strange invocations in one day's ramble; but never a tithe as many by any other pueblo.

According to the nature of the prayer, the stick, the feathers, and the manner of tying them vary. The Indian who has a favor to ask of the Trues prepares his feather-prayer with great solemnity and secrecy, takes it to a proper spot, prays to all Those Above, and plants the prayer-stick that it may continue his petition after he has gone home.

This use of the feather is also shared by the Navajos; and so is what may be called the smoke-prayer, in which the smoke of the sacred cigarette is blown east, north, west, south, up and down, to scare away the evil spirits and please the good ones.

In a corner of the Navajo country, too, is another curiosity of which few Americans are aware—a catacomb of genuine mummies! This is in the grim Cañon de Tsay-ee—commonly called "de Chelly"—which is lined along the ledges of its dizzy cliffs with the prehistoric houses of the so-called Cliff-dwellers. These were

not an unknown race at all, but our own Pueblo Indians of the old days when defense against savage neighbors was the first object in life.

These stone houses, clinging far up the gloomy precipice, were inaccessible enough at best, and are doubly so now that their ladders have crumbled to dust. In them are many strange relics of prehistoric times, and in some the desiccated bodies of their long-forgotten occupants. There is a still larger "deposit," so to speak, of American mummies in the wildly picturesque San Juan country, in the extreme northwestern corner of New Mexico and adjacent parts of Colorado and Utah. They are in similar cliff-built ruins, and belong to the same strange race. And so we have one of Egypt's famous wonders here at home.

But the Southwestern—like the Peruvian—mummy was not embalmed. It did not need to be, in these intensely arid lands, where a body desiccated perfectly.

The largest Indian tribes of the Colorado desert have from time immemorial cremated their dead on funeral pyres, after the fashion of the classic ancients and of modern India. All the property of the deceased is burned in the same flames, and the mourners add their own treasures to the pile. And so property does not accumulate among the Mojaves, and there is no contesting of wills. Obviously, too, they have no lawyers.

CHAPTER XIV

THE KING OF BLANKETS

The American Bedouins and their Stolen Arts, in Which They Excel—The Wonder-weaving of Rudest Out-door Looms

THESE First Americans who have dwelt in the Southwest Wonder Land from time immemorial are as full of interest as the startling whims of nature. The largest tribe of Indians in the United States, those least changed by civilization, and numerically holding their own under the pressure of modernism, are the Navajos in the northwestern mountains of New Mexico and the eastern ranges of Arizona. They number full twenty-five thousand—our unchanged nomads, the Arabs of the New World. Bedouin-like they drift hither and yon, over their vast reservation of desert, a wilderness bigger than Massachusetts, Connecticut, and Rhode Island put together, but with less "good country" in it all than there is within twenty-five miles of Boston; yet they have not a single aboriginal industry left, except the planting of a little corn. All their creeds, ideals,

ceremonials, garb are primitive and pagan; all their industries are European. The Spaniards three hundred years ago brought horses, cattle, and sheep into New Mexico and taught the Pueblo Indians their use. The Navajos raided the Rio Grande Valley, ran off the cattle and sheep and horses of the Pueblos and the Spanish settlers, and proceeded to become the largest stock-raisers in the Southwest—in fact, of any American Indians whatever. They have now something like a million sheep and goats, fifty thousand cattle, and tens of thousands of beautiful ponies—derived from the Arab steeds brought over by the *conquistadores.* They still cultivate a little corn, as in primitive days. They "always knew" how to weave cotton, of which a little, poor in quality, was found in the Southwest in ancient days. But from Pueblo and Spanish captives they learned the use of wool; and they became the most notable weavers that North America has ever known.

No Indian of the Southwest knew anything of metals until the Spaniards came; but the Pueblos learned silversmithing very promptly. From them the Navajos acquired the art, and beat them at it; and they now have in their possession hundreds of thousands—and have had millions—of Mexican, and then American, silver dollars worked over into aboriginal adornments. I know

of no other case in ethnology where a tribe has become famous in two arts borrowed (or stolen) from Caucasians.

The silver rings, bracelets, ear-rings, buttons, belt-disks, dress-pins, and bridle ornaments are admirably fashioned, and with a few rude tools. The archer's wristlet, which every bowman wore, whether he were Robin Hood or Bushman, might do for others in plain or ornamented leather; but the Navajo smith, working on a flat stone for an anvil under a tree, made silver wristlets, of which some are of extraordinary art beauty. This is of course a great step beyond the primitive "jewelry" which all tribes everywhere contrived to fashion of the most attractive material at their command, like the marvelous work of the "lazy and stolid savages" of California in abalone and other iridescent shells, in wampum, in beads sawed from birds' bones, and so on. The Pueblos and the Navajos from time immemorial made beautiful beads of turquoise and spars, drilling the fragment with an agate drill, stringing the beads, and then rounding them by rolling the string on gritty sandstones. But the metal-worker, melting and shaping his material, has of course advanced a long step.

It seems remarkable that unwashed nomads, who never live in a house, weave a handsomer, more durable, and more valuable blanket than is

turned out by the costly and intricate looms of Europe and America. But it is true. The covers which shelter us by night, the rugs upon our floors, are very poor things, artistically and commercially, compared to the superb fabrics woven a hundred years ago by these nomads in the rudest caricature of a loom. The Navajo woman has no housework to do—since she has no house. Yet within a hundred miles are the cleanly, industrious, farm-tending, home-loving Pueblos, whose housekeepers could bear comparison with the best of our own. Wandering from place to place in their great wilderness, the Navajos make hardly any pottery. If they need any, they get it from the expert Pueblos, in exchange for their own matchless blankets, which the Pueblos no longer weave. It is a curious case of inter-tribal specialization.

It fairly takes one's breath away to ride up one of these barren mesas, among the twisted cedars or scraggy piñons, and find a ragged Indian woman squatted before a loom made of three sticks, a rope, and a stone, weaving a blanket of greatest beauty in design and color, and with the durability of iron. But that is what one may see a thousand times in this strange land by taking the necessary trouble, though it is a sight that few white people do see. The Navajo is a seeker of seclusion and instinctively pitches his camp in

an out-of-the-way location. You may pass within fifty yards of his *hogan* and never suspect the proximity of human life, unless your attention is called by one of his wolfish dogs, which are very fond of strangers—and strangers raw. If you can induce the dog to save you for supper and will follow his snarling retreat, this is what you may see:

Under the shelter of a juniper, a semicircular windbreak built breast-high of brush, and about fifteen feet from point to point; a tiny heap of smoldering coals; a few greasy sheepskins and blankets lying against the brush; perhaps the jerked meat of a sheep hanging on a branch, and near it pendent a few silver ornaments; a bottle-necked basket, pitched without and full of cold water; a Winchester leaning against the "wall"; a few bare-legged youngsters of immeasurable mirth, but diffident towards strangers; mayhap the lord of the castle and a male companion or two playing *conquian* with solemn faces and Mexican cards; the dogs, the lariated ponies—and the lady of the house at her remarkable loom.

For simplicity of design, the Navajo "loom"—if it can be dignified by such a title—is unique. Occasionally the frame is made by setting two posts firmly in the ground about six feet apart, and lashing cross-pieces at top and bottom. So complicated a thing as this, however, is not usual.

Ordinarily a straight pole is lashed between two trees, at a height of five or six feet from the ground. A strong rawhide rope, wound loosely round and round this, serves to suspend the "supplementary yarn-beam," a straight bar of wood five or six feet long. To this in turn is attached a smaller bar, around which are tied the upper ends of the stout strings which constitute the warp. The lower ends of these strings are tied to a similar bar, which is anchored by stones at a distance of about two inches from the ground, thus keeping the string taut. And there is your loom.

On the ground a foot away squats the weaver, bare-shinned and bare-armed, with her legs crossed tailor-fashion. The warp hangs vertically before her, and she never rises while weaving. A stick holds the alternate cords of the warp apart in opposite directions, and thus enables her to run the successive threads of the woof across without difficulty. As soon as a thread has been thus loosely introduced to its proper position, she proceeds to ram it down with the tightness of the charge in a Fourth-of-July cannon by means of a long, thin, hardwood "batten-stick," frequently shaped something like an exaggerated bread-knife. It is little wonder that that woof will hold water, or stand the trampling of a lifetime. Every thread of it is rammed home with a series of vicious jabs sufficient to make it "set down

and stay sot." For each unit of the frequently intricate pattern she has a separate skein; and the unhesitating skill with which she brings them in at their proper intervals is astonishing.

Now, by the time her woof has risen to a point twenty-five to thirty inches above the ground, it is evident that some new arrangement is essential to her convenience. Does she get up and stand to the job? Not at all. She simply loosens the spirally wound rope on the pole above so that its loops hang a foot or two lower, thus letting down the supplementary yarn-beam and the yarn-beam by the same amount. She then makes a fold in the loosened web, and tightly sews the upper edge of this fold to the cloth-beam below, thus making the web taut again. This is the Navajo patent for overcoming the lack of our "revolving cloth-bearers." This operation is repeated several times before a full-sized blanket is completed. The smallest size of saddle-blanket can be woven without changing the loom at all.

All Navajo blankets are single-ply, the pattern being the same on both sides. I have seen but very few which had on one side a different pattern from that on the other and that was obviously an "intrusion."

The range of quality in Navajo blankets is great. The common blanket, for bedding and rough wear, is a rude thing indeed beside its feast-

day brother. These cheap ones, almost always of full size—about six by five feet—are made of the native wool. The Navajos raise their own sheep, shear them, card, twist, and dye the wool. The prevailing color of the blanket is natural—a whitish gray—and through this ground run cross-stripes, generally of blue, but sometimes of red, black, or yellow. These stripes are mostly in native dyes, the blue being now obtained from American indigo. They also dye in any color with tinctures made by themselves from herbs and minerals. These wool blankets require a week or so for weaving, and sell at from ten to twenty dollars apiece. They are frequently half an inch thick, and are the warmest of blankets, their fuzzy softness making them much warmer than the higher-priced, tighter-woven and consequently stiffer ones.

In the second grade of blankets there is an almost endless variety. These are now made of Germantown yarn, which the Navajos buy in big skeins at the various stores and trading-posts around their reservation. And remarkably fine blankets they make of it. Their ability as inventors of neat designs is truly remarkable. The cheap blankets are "very much of a muchness;" but when you come up into patterns, it would be difficult to find in the whole Southwest two blankets exactly alike. The designs are ingenious,

characteristic, and admirably worked out. Sometimes the weaver traces the pattern on the sand before beginning her blanket; but as a rule she composes it in her head as the work progresses. Circles or curved lines are never used. The prevailing patterns are straight stripes, diagonals, regular zigzags, diamonds, and crosses—these last being to the Indian emblems of the morning or evening star, and not of Christian import. The Swastika, when put in a Navajo blanket simply proclaims it a fake. It never had any place whatever with the American Indian, and is a cheap modern impudence of traders who have it woven in to please ignorant customers.

The colors used are limited in number. Scarlet is the favorite red, and indigo almost the only blue in use. These and the white of the bleached wool are the original colors, and the only ones which appear in the very best blankets. It is curious that these savages should have chosen our own "red, white, and blue" long before we did; they were weaving already before the first European ever saw America. The Spanish conquerors brought the first sheep to the New World, and soon gave these valuable animals to the Pueblo Indians. And so wool came into New Mexico and displaced the Indian cotton, and the Navajos quickly adopted the new material.

But for the last twenty-five years there has been

a sad deterioration in Navajo weaving; the Indians have learned one of the mean lessons of civilization, and now make their blankets less to wear than to sell.

An abominable combination of colors has crept in, with our aniline dyes, until it is very difficult now to get a blanket with only the real Indian hues. Black, green, and yellow were sometimes found in superb blankets so combined as not to lessen their value; but as a rule these colors are to be avoided. But now some weavers use colors which to an unspoiled Indian are actually accursed—like violet, purple, dark brown, etc., the colors of witchcraft—and such blankets are worthless to collectors. With the Indian, color is a matter of religion, and red is the most sacred of hues. The amount of it in a blanket largely determined the price. Years ago, a post-trader received a shipment of prepared coffee, half in red papers and half in blue. In a month every red package was gone, and every blue package was left on the shelves; nor would the Indians accept the blue even then. The same thing is common in Mexico. One reason the German traders are so successful in those countries is that they are willing to humor the customer's "fool notions."

The largest of these Germantown-yarn blankets take months to weave, and are worth from thirty to one hundred dollars—sometimes more.

The very highest grade of Navajo blanket is now very rare. It is fifty years since one of them has been made; the yarn blankets, which are far less expensive and sell just as well to the ignorant traveler, have entirely supplanted them. Only a few of the precious old ones remain, and they are priceless. I knew every such blanket in the Southwest thirty-five years ago; and, outside of one or two private collections, the specimens could be counted on one's fingers. The colors of these choicest blankets are red, white, and blue, or, rarely, just red and white. In a very few specimens there is also a little black. Red is very much the prevailing color, and takes up sometimes four fifths of the blanket, the other colors merely drawing the pattern on a red ground.

This material is from a fine Turkish woolen cloth, a serge called *bayeta.* It used to be imported to Mexico, whence the Navajos procured it at first. Later, it was sold at some of the trading-posts in New Mexico. The fixed price of it was six dollars a pound. The Navajos used to ravel this cloth and employ the hard-twisted thread for their finest weaves; and it made such blankets as never have been produced elsewhere. Their durability is wonderful. They never fade, no matter how frequently washed—an operation in which *amole,* the saponaceous root of the *palmilla,* should be substituted for soap. As for wear, I have seen bayeta blankets which had been

used for rugs on the floors of populous Mexican houses for fifty years, which still retained their brilliant color and showed serious wear only at their broken edges. And they will hold water as well as canvas will.

A bayeta blanket like that shown in the frontispiece is worth thousands of dollars, and another could not be bought at any price. It is seventy-three inches long by fifty-six inches wide, and weighs six pounds. You can easily reckon that the thread in it cost something at six dollars a pound, and the weaving occupied a Navajo woman for more than a year. It is hardly thicker than the cover of this book, and is almost as firm. It is too thin and stiff to be an ideal bed blanket, and it was never meant to be one. All blankets of that quality were made to be worn upon the shoulders of chiefs; and most of them were *ponchos*—that is, they had a small slit left in the center for the wearer to put his head through, so that the blanket would hang upon him like a cape. Thus it was combined overcoat, waterproof, and adornment. I bought my next-best specimen in 1889, after weeks of diplomacy, from Martín Valle of Acoma. He bought it thirty years earlier from a Navajo war-chief for a lot of ponies and turquoise. He had used it ever since, but it is as brilliant, and apparently as strong, as the day it was finished.

This Bayeta of the frontispiece, the most extra-

ordinary blanket I have ever seen, I had known and coveted for many years. It is a shade larger, and was the property of the same dear friend, Martín Valle, that noble old Indian, seven times governor of his little sky-built republic of Acoma, who first told me the story of the Enchanted Mesa. I tried for many years to get it from him, with all the treasures in my possession—and I had many things an Indian loves—but he never would sell. That I have it to-day is due to the unfilial "Americanized" action of his son, who "held it out on him," and buried him in the next-best Navajo (itself worth a king's ransom) and later brought this incomparable one to me. It was too late to "restore" it to brave old Martín; and perhaps in my hands it will wrap his memory longer and warmer than it could have done under the sands of that great, strange Campo Santo in the "City of the Sky." The color plate gives some dim notion of the dignity, beauty, and strength of this matchless weave.

These finest blankets were seldom used or shown except upon festal occasions, such as councils, dances, and races. They were then brought forth with all the silver and beaded buckskin; and in a large crowd of Indians they make a truly startling display. Some wear them with the middle girt around the waist by a belt of heavy silver disks, the lower end falling below the knees,

the upper end thrown loosely over the shoulders. Others have them thrown across the saddle, and others tie them in an ostentatious roll behind.

The Navajos and Pueblos also weave remarkably fine and beautiful belts and garters, from two to eight inches wide and two to nine feet long, and durable and pretty dresses for their women.

The loom for weaving one of the handsome belts worn by Pueblo women is quite as simple as that of the Navajos for weaving blankets. One end of the warp is fastened to a stake driven into the ground in front of the weaver, the other to a rod held in place by a strap around her waist; and so to tighten the warp she has only to sit back a little. The device for separating the alternate threads of the warp so that the shuttle can be pushed through looks like a small rolling-pin; and in the weaver's right hand is the oak batten-stick for ramming the threads of the woof tightly together. The weaver sits flat upon the ground; generally upon a blanket to keep her *manta* clean, for the dress of a Pueblo woman is neat, handsome, and expensive. These belts are always two-ply; that is, the pattern on one side is different from that on the other.

Oddly enough, while it is the woman only who weaves, among the Navajos and the Rio Grande

Pueblos, the loom in the Moqui pueblos, just beside the Navajos, is monopolized by the men. It is they who make the fine, firm *mantas* which are the chief article of apparel of all Pueblo women.

The degradation of the Navajo blanket from its old-time preeminence, came with the later "smart American" Indian-traders. The Old-Timers who held down the lonely little trading-posts of the danger days, were content with the unadulterated Indian product. But 30 years ago, when there was no longer risk or hardship, came different traders. Progressive! They fooled weaker Indian women to weave un-Indian designs—blankets with Swastikas, alphabets, figures of men and women, even railroad trains! Worst of all, to use Haste and indecent aniline colors.

On the other hand, one Indian-trader, J. Lorenzo Hubbell, native of New Mexico, the last and greatest of the Patriarchs and Princes of the Frontier, did more to save and rehabilitate this noble art-craft than all government, philanthropic and other influences and agencies put together. He insisted on "honest Injun" blankets—and in a generation he almost effected a renaissance in this most notable art product of American aborigines. But, alas—his day is past.

Photo by Chas. F. Lummis

ACOMA—THE HORSE TRAIL, BUILT AFTER 1650

CHAPTER XV

ACOMA, THE CITY OF THE SKY

The Most Interesting Rock in the World—A Strange Prehistoric Cliff-top Town, Still Picturesquely Inhabited

THE Southwest was aptly called, long ago, the "Land of the Standing Rocks." The famous Garden of the Gods in Colorado is a characteristic part and parcel of that great Playground of the Giants of the days of the red sandstone. A large portion of northerly New Mexico and Arizona was covered with an enormous sheet of sandstone, thousands of feet thick and of varying color. A large region is distinguished by a rich red, which is due to iron; and the wasting of the cliffs has filled the valleys with soil as ruddy. These standstones were fine, homogeneous, and very "clean" in structure; and erosion has carved them in a fashion almost exclusive to our Southwest, the only great "mesa" country. As major streams cut broad valleys through this sandstone upland, and side streams digitated the abutting cliffs on either side with

cañons, the face of the country came to resemble a vast plain upon which great cubes and other objects of rock had been laid down like dominoes upon a table. It is the reverse process of the erosion of the Grand Cañon, which is a vast intaglio; while the Red Rock Country is a great cameo. There are all sorts of grotesque shapes carved here; spires and towers and pinnacles and "hogbacks"; many of them even more fantastic and far greater than the familiar wonders of the Garden of the Gods. Some look like great truncated cones, and some like huge railroad roundhouses, and one very closely simulates a locomotive engine three hundred feet or so in length, and the famous "Navajo Church" strikingly resembles a cathedral. But the dominant and characteristic feature of the landscape is the mesa—table-topped, with sides apparently sheer, with an area from a few acres to many hundreds, and of a height up to a thousand feet or more. There is a deep fascination about them—their almost blood-red cliffs, the mass and dignity of their bulk, the awe and loneliness and silence, and the play of the New Mexico sun and the drifting shadows and reflections of high-piled cumuli.

Quite naturally, these mesas attracted the reverent First Americans, not only by their grandeur but by their availability for a safe home. Hundreds of prehistoric ruins still slumber on the

lonely tops of these mesas; and in a few cases we can trace descent from them to people who are with us to-day.

I have never found any reason to take back what I said, more than a third of a century ago: "Acoma[1] is the most interesting rock in the world." That is rather a large word, but I think it will stick. It is a perfect museum of the freaks of erosion; for this great stone island, left alone in the center of an enchanted valley whose cliffs are about three miles away on either side, seems to have been chosen as a very workshop and playground by whimsical spirits of flood and frost and wind; and they have carved, gouged, gnawed its periphery into a very labyrinth of bays, gullies, clefts, towers, bastions, caves, natural bridges, and gigantic mushrooms. One could spend a week in toilsome clambering to explore the "coast-line" of this island in the air. I have ransacked it a hundred times, and can always go back and find something new and startling. Few cliffs anywhere are actually perpendicular, though we talk as though they were a frequent occurrence; but some of the cliffs of Acoma are really perpendicular—and in places actually overhanging.

This great rock, about a mile long, and 357 feet

[1] Pronounced with the stress on the first syllable.

high, is shaped very much like a pair of eyeglasses; and a few millenniums more of erosion will cut away the "bow" altogether and leave two distinct mesas. As it is, it involves a toilsome clambering down the wind-smoothed rocks and up the huge drifts of sand blown up by desert winds to the very peak of the cliff, to cross from the northern mesa to the southern—a very important and necessary trip, as will appear later.

But while its fantastic carving by the forces of nature makes the rock of Acoma endlessly interesting and delightful, its deeper wonder lies in the human romance and history which brood upon that strange wild citadel. For Acoma is the oldest home of the First Americans continuously occupied to this day. When Coronado, that intrepid Spanish explorer, came in 1540 to New Mexico, he was the first European to see this high-perched city and the other pueblos. Acoma and Isleta—fifty miles east, on the bank of the Rio Grande, and called by its natives Shee-eh-huib-bac—are the only Pueblo towns which have not changed their location in the least in that 380 years. And in all the history of the Southwest no other Pueblo city has played so romantic and so notable a part. Its story is as fascinating as the natural wonders of its incomparable site.

I have written a great deal about Acoma—

there is a chapter about this "City in the Sky" in my book, "The Land of Poco Tiempo," and two chapters of "The War of the Rock" in "The Spanish Pioneers"—and I shall merely sketch here the historic outline. Coronado was kindly received in Acoma, and left us a very good account of it. In 1581 Espejo visited and wrote about Acoma and the snake-dance he saw there—the astounding ceremonial (for it is not a "dance" in our sense, but a religious rite of the deepest solemnity and significance) which was once common to all the pueblos but is now confined only to the remote Moqui towns. In 1598, Oñate, the great colonizer of New Mexico, marched to Acoma and received the formal submission of the people as vassals of the Spanish crown. But immediately after his departure his lieutenant Juan de Zaldivar arrived with thirty men from a tremendous journey, and camped at the foot of the cliff. The Indians received him hospitably and invited him up to their strange town. Leaving half of his little force to guard the horses, he clambered up the rocky trail with sixteen men. The Indians officiously showed them about their fortress-village, with its three great blocks of terraced houses, each block about a thousand feet long and of three stories, and the rock reservoirs for holding the rain and snow-water, and other interesting things—till they were scat-

tered here and there. Then the war-chief raised the wild "enemy yell," and men, women and children fell upon the scattered soldiers, and clubbed and hacked them to death—all but five, who fought their way to the edge of the cliff, and, pressed by the howling mob, leaped over that dizzy verge! It would not be credible were it not fully proved in history, but only one of the five was killed by this frightful leap. Undoubtedly they must have come to the lowest portion of the cliff, and where the great soft sand-drifts came highest; but even so their fall cannot have been less than 150 feet. One was killed outright, but Juan Tabaro, the sergeant, and three others were nursed back to health by their frightened comrades who had remained in the camp. Here they remained several days to mend their wounded, and then with splendid gallantry divided into little bands of which one followed Oñate on his lonely march to Moqui to warn him of his danger, and another to plod the desert to far-off San Gabriel, the little Spanish colony which Oñate had first founded in New Mexico, where the women and children were gathered; and others went to warn the missionaries scattered here and there among the pueblos.

Obviously, Acoma must be punished or New Mexico abandoned; for the thirty thousand Pueblos were waiting only to see the result of

© by Chas. F. Lummis

ACOMA, LOOKING OUT FROM THE NORTH TRAIL
Enchanted Mesa in distance

this first resistance to the invaders. This dangerous mission was intrusted by Oñate to Vicente, the brother of Juan de Zaldivar, with a force of seventy men—more than one third of the total Spanish force in New Mexico. Most of them were armed only with swords and lances, and clad in jackets of quilted cotton or battered mail. Only a few had even the clusmy flint-lock muskets of the day. A little *pedrero,* or mountain howitzer, lashed upon the back of a horse, was the only artillery. The projectiles for this were generally pebbles. It was eleven days' march from San Gabriel to Acoma—heavy, sandy, thirsty miles. On January 21, 1599, Zaldivar halted at the foot of the great cliff and called upon the savages to surrender. The summons was met with wild and insulting derision, all the Acomans and hundreds of Navajo allies dancing and shrieking defiance from the top of their impregnable cliffs.

At daybreak on the morning of the twenty-second the Spaniards began a desperate assault at the north end of the mesa, there absolutely impregnable, firing their arquebuses and making a great show of storming. During the night, twelve picked men had crept along under the overhanging cliffs, dragging the *pedrero* by ropes. They managed to reach the top of the south mesa unobserved and concealed themselves among the strange mushroom rocks which mark that

area. The boom of the *pedrero* as it hurled a small cobblestone into Acoma apprised the main force of the success of this flanking party and rallied the Indians to the new point of attack. But between the town and the Spaniards still lay a narrow but dizzy gulf; and the Spaniards were safe in their natural intrenchments. That night squads of men climbed the beetling cliffs that wall the valley on the west, cut down some small pine-trees, and with infinite labor brought the logs down the cliff, across the valley, and to the top of the cliff on which the twelve were stationed. A score were left to guard the horses at the north end of the mesa, and the rest of the force joined the twelve. At daybreak of the twenty-third, a squad of picked men rushed at signal from their hiding-place with a long slender log upon their shoulders, and by a splendid cast lodged its tip on the opposite brink of the abyss. Out dashed the Spaniards in single file, balancing across that dizzy bridge in the face of a rain of stones and arrows; but only a few had crossed when one in his excitement, holding the rope, pulled the log across after him, so that its butt hung balancing on the further brink, and the twelve Spaniards who had crossed were thus cut off from their companions and surrounded by overwhelming odds. The Indians swarmed upon them like ants; and at such close quarters the clumsy firearms and

inefficient armor were a fatal impediment. It seemed the first Acoma massacre was to be repeated. But at this moment came the Man—a slender college boy whose surpassing prowess then and there saved them and the fate of Spain in New Mexico. From among the horror-stricken Spaniards on the southern cliff, he came bounding like an antelope, gathered at the brink, and in one incredible bird-like leap cleared the gulf, and threw his reata, knotted to the butt of the balancing log, back to his companions; they dragged the precarious bridge back to place, and all the force came pouring across to retrieve the day. Outnumbered nearly ten to one, almost buried under the wave of howling savages, dazed with clubs and pierced with arrows, Zaldivar and his hero band fought their way inch by inch, driving the stubborn foe with still more stubborn valor, until at last the Indians, firmly believing that these could be no human enemies, fled to the shelter of their fortress houses. The Spaniards intrenched themselves and drew up the little *pedrero,* which slowly battered down room after room of the pueblo dwellings but made little impression on the great blocks of communal houses. It was a matter of carrying each house at the point of the sword. There were many sorties in which desperate bands of warriors tried to cut their way through the besiegers. Many sprang

over the cliff and were dashed to pieces at its foot; and two Indians survived that incredible leap as miraculously as the four Spaniards of the early massacre. For three days this fearful struggle lasted; on the third the old men of the pueblo came forth to sue for mercy, which was at once granted. The ringleaders in the murder of Juan de Zalvidar were dead, and so were nearly all the Navajo allies. It was the most desperate struggle New Mexico ever saw; the Indians lost five hundred slain and many wounded, and of the surviving Spaniards there was not one but brought to his grave many a ghastly scar in memory of Acoma. The town was so nearly destroyed that it all had to be rebuilt—and that was no trivial labor. All the material to build a three-storied town for nearly a thousand souls had to be brought up that cliff on human backs, and the timber came from long distances. The crops and all other supplies, stored in the little lower rooms of the terraced houses were all destroyed. And Acoma remembered its lesson for three quarters of a century.

The young athlete who made that marvelous leap across the chasm between the north and south mesas and saved the day for Spain was a notable and romantic character: graduate of a Spanish university, a hero among the heroes of the New World, and a chronicler to whom

we are greatly indebted—Captain Gaspar Perez de Villagran. The few extant copies of his historical poem in thirty-four heroic cantos, covering the conquest of New Mexico, are each worth many times their weight in gold. This soldier-poet had other reasons to remember Acoma: it was by a bare scratch that he missed being in the first massacre. He had returned from the pursuit of deserters from San Gabriel, in which he followed them down to southern Chihuahua; and he reached Acoma, returning from this eighteen-hundred-mile ride, just after the survivors of the massacre had left. The Indians pursued him, but he escaped, only to be caught in a pitfall dug by the Indians, with a sharp stake in the center and covered with brush. His horse was transfixed; and Villagran barely came off with his life. For four days and four nights thereafter he was toiling along on foot on the trail of the Spaniards, and he escaped death by thirst only by the last desperate resort of drinking the blood of his faithful dog. A little later he found a few grains of corn on a hollow ledge; and at last he was found by soldiers sent back by Oñate to trail runaway horses. His poem on the conquest of New Mexico is the most graphic story we have of those stirring days, and indicates the thoroughness of his classical education, for it is a "saturated solution" of Virgil.

In 1629, by which time the Franciscan missionaries had planted a score of missions among the far-flung Pueblo towns, Fray Juan Ramirez, the "apostle of Acoma," trudged the 150 miles from Santa Fé alone, declining an escort of soldiers, and with no other weapon than his crucifix. The Indians met him with a great flight of arrows from above, some of which pierced his robes. A little girl of Acoma just then lost her balance in the confusion, and fell over the precipice—fortunately landing on a sandy ledge, out of sight of her people. Fray Juan climbed to her and carried her unharmed to the top of the rock, at which the Indians received him as a good wizard. The wild and picturesque trail up which he clambered, now nearly three hundred years ago, is still used by the people of Acoma and is still called by them "El Camino del Padre," the Trail of the Father. This earnest man dwelt alone in Acoma for more than twenty years, beloved by the natives, and most successful in teaching them the catechism and to read and write in Spanish; he also superintended their building of a large church with enormous labor. He died in 1664, leaving his flock the gentlest Pueblos in New Mexico and among the most civilized. In 1680, in the red Rebellion of all the Pueblos of New Mexico, the work of the missionaries was largely overwhelmed for the time being, and many of them were slain. Fray

© by Chas. F. Lummis

ALL ACOMA, FROM THE CHURCH ROOF

Monastery in foreground, Enchanted Mesa in distance

Lucas Maldonado, then missionary to Acoma, was killed by his parishioners in August, 1680. Twelve years later the great rock voluntarily surrendered to Diego de Vargas, the distinguished reconqueror, but rebelled again in 1696. Vargas marched against Acoma but was unable to storm it, though he had made a most extraordinary capture of the great Black Mesa of San Ildefonso. The mission at Acoma was reëstablished about 1700; and a new and far larger church was built in place of the Ramirez temple which the rebels had destroyed. Since 1700 Acoma has been at peace; it would none of the uprising attempted by several of the pueblos in 1728.

On the summit of this lofty mesa, reached only by a few dizzy trails which could be easily guarded and barricaded, there was no need for the people to build their communal house in a great rectangle around a courtyard and closed by a gate. The dwellings are in three great blocks, parallel and facing south, each block near a thousand feet long, and divided by a "cross street" now, though originally by a tunnel-alley such as still serves to go through the northern line of houses to the ash-heaps and corrals beyond. But while the block is continuous, and on the back or north presents one unbroken wall, the front is terraced

in three stories, so that it looks like three gigantic steps, and these are marked at every twenty-five to forty feet by little parapets rising from the partition walls that rest on the bed-rock. So the block is a long succession of "apartments," three stories high, and each story receding the depth of a room from the front of the story below. Only within very recent years, and in very few houses, are there even now doors in the lower story—these in the residences of a few extra-progressive Indians who have Mexicanized these lower rooms. The traditional and still almost universal fashion is to climb by a short ladder to the roof of the first story, which makes a big platform in front of the second. The second story and the third have their doors; and inside the second story is a trap-door, whose ladder gives access to the dim lower rooms, which are used almost wholly for storage. There are a good many real windows now in Acoma, but the vast majority are still sheets of translucent gypsum from the mountains—sheets perhaps half an inch thick and, for a fine one, sixteen inches square. High up in the north (rear) wall are loopholes or little windows, which are generally not glazed. The buildings are very substantial, of slabs of flinty sandstone, laid up in adobe mortar with excellent plumb. The ceiling beams are peeled pine or piñon logs, thatched over with peeled sticks on which hay is

laid thickly, and above all is puddled adobe. This mud roof is perfectly water-tight if properly cared for; but a burrowing mouse can cause havoc.

When we find a spot of beauty or of wonder, our first thought is to make it "accessible" so that every one can get to it without any trouble greater than that of paying his fare and his accommodation. The commercial spirit is first and foremost. With the aborigine, on the other hand, his precise desire was to have such a spot so that everybody could *not* get to it; so that it would be safe for those to whom it belonged, and who were willing to take the trouble to get there. All the ancient cliff-dwellings of the Southwest were difficult of access, purposely; for all were surrounded by crafty and savage enemies. Doubtless no other town in the world to-day is still reached by such dizzy trails as Acoma; and omitting the "Horse Trail," which has been built only since peace became permanent, the four ancient trails to the mesa's top are wild and dangerous climbs up narrow clefts, often with no better foothold than little hollows gouged out of the rock and barely big enough to admit fingers and toes. The Camino del Padre [1] just north of the Horse Trail, is by far the most frequently

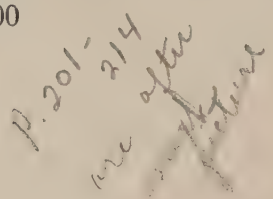
[1] See illustration, page 209.

used. Big flat stones have been lodged so as to afford rude steps in the lower gulch; and at one point one must climb fly-like up one cliff-side by toe-holes, and directly pass under a huge fallen boulder from above, caught in the jaws of the cliff; and, climbing up a big notched log, crawl through a narrow opening at the other side of this boulder. The "Split Trail" falls over the cliff southeast of the great church, almost immediately entering a cleft so narrow that you steady yourself with your palms on each side, and so steep that you need steadying to keep your footing on the slippery sandstone. It is very prudent to "make" this trail in stocking-feet or barefoot. Further down there is a perpendicular drop, where the only landing is on a boulder about four feet high and two feet square; and the remainder of the way to the foot of the cliff is so steep that many people prefer to negotiate it sitting down and inching cautiously forward—the cleft having widened here so that there is no chance to get support from its walls. The "Caracol Trail," a few hundred yards around to the southwest from this, is extremely picturesque and not at all difficult. But the gem of all these ancient adits to Acoma is the wild "North Trail." This attacks the highest part of the cliff behind the back walls of the northern row of houses. It is about the point where Zaldivar's men made their feint in the

memorable "War of the Rock." Starting at the foot with a notched log, winding around a dome of sandstone by single footholds barely wide enough to receive a foot, and with no alternative if you put the wrong foot forward, it clambers past a natural bridge and into a tremendous rocky amphitheater of overpowering majesty, in which sits enthroned a colossal, awesome figure like a Buddha. It is all very well until within the last hundred feet of the top; there the trail peters out into a narrow shelf, sloping outward, where you must cling to finger-holds in the cliff as you edge along sideways and can look down over your shoulder hundreds of feet. And the last forty feet are straight up, with toe-holds on either side of a narrow cleft. The Indians have not used this trail for a century, not merely because it is difficult and dangerous, but because it is "haunted." Long ago, on one feast-day, there was a race to climb this trail—a man carrying a sheep on his shoulders, and a woman a tinaja of water upon her head. The sheep kicked just as the young brave came midway of the last "ladder rock" and threw its bearer down backward; he fell upon the woman, and all rolled down the cliff to mutilation. So far as I know, I am the only white man who has climbed that trail twice, and I am sure that my wife and my daughter Bertha are the only women; but I had a good Pueblo

friend at the top with his reata, which was noosed under their arms, to make assurance doubly sure —though with stocking-feet and dexterous fingers they gave no call for the use of this emergency rope.

It is hard enough for us to understand how a people can endure the inconvenience of getting to their homes by such arduous stairways; but it is absolutely incomprehensible to our standards that they should have brought up these terrible trails all material whatever for their massive town. Besides the houses for about six hundred people, there is the enormous church, sixty feet high and with walls ten feet thick, and with its establishment covering more ground than any cathedral I know of in the United States. Some of the timbers in this church are forty feet long and fourteen inches square; and they were brought by man-power alone from the side of Mount San Mateo, at least twenty miles away, and worried up that wild cliff with incredible and deathless patience. No less wonderful is the graveyard in front, about two hundred feet square. The mesa slopes off sharply from the front of the church, and so these tireless people built a great stone box, sixty feet deep at the outer end, and two hundred feet square, and then filled it with sand brought up from the plain in buckskin bags upon their sturdy backs. I should like to have



of his death, in 1892, as I was packing for South America, he rode his wiry pony the sixty miles to my pueblo of Isleta for a final visit, being then ninety-eight years of age, but still a very centaur, his old eyes sharp as an eagle's, and his well-stored brain still working clear. I sent him back by train to Laguna, nearest railroad point to Acoma, and had one of my Isleta lads take the pony thither across country. And in those last days we went over the old story more than once, lovingly and searchingly, and the tale was invariable, as those "told-down" traditions are; but I learned a few collateral details, rather of scientific than romantic interest. Martín was seven times governor of his little cliff-built republic (for each pueblo was and is an independent republic). He was the most learned of the *Principales* in the enormous and precise mass of traditional and ceremonial lore, and was a man whose face and character would have stamped him noble anywhere.

A millennium ago, the people of Acoma dwelt on this great island of rock, Katzímo, 431 feet high and forty to fifty acres in summit-area. We know several other homes of theirs on other mesa-tops in the same region, far earlier yet. We have no clue of chronology, but Katzímo was already ancient as a home of these patient people when its

tragic end came. And that was so far back in the ages that the Acoma of to-day, where the survivors took refuge and duplicated their lost pueblo, was already of immemorial years when the Spaniards came in 1540. Briefly, the legend of Katzímo is this, omitting the circumstantial details in which it has come down in prescriptorial wise from father to son:

In the old days the Hano Oshatch dwelt on the summit of Katzímo, "as many as here to-day in Acoma"—about six hundred. They were safe and happy. Their fields were in the valley, good with corn and beans. There was much game, of deer and antelope and wild turkeys and rabbits and quail; and the people made round-hunts, hemming in much country, and killed great store of game with arrows and the rabbit-stick; and "jerked" the meat in the sun; and the store-rooms were abundant with corn and parched meat and piñon nuts and *frijoles* (native beans). There were no horses or cows or burros or hens or cats as we have now, nor many dogs; only a few that were brought from the buffalo plains where the Apaches had many. But there were tame eagles and tamed wild turkeys, for the feathers, which are "good medicine."

There were no sheep, and no wool for blankets or *mantas;* but they made their dress of *gamuza* (buckskin), and of robes of rabbit-skin, and of

feathers. Their houses were like the houses in Acoma now, and three rooms high; and the *estufa* was like ours, in a room upon the rock; and all the top was solid rock, bare, without grass or trees. And they had no church as we have—for the Wet-head Fathers [1] had not yet come. But they sang and danced just as we do, in the same times of the year, and made prayer-sticks to put in secret places in the rocks, as we do ourselves, to pray to Those Above, to the Sun Father, and the Moon Mother, and the Hero Twins, and to all of them. And they had snake-men, with the Power, and they kept *Cha-ra-rá-de,*[2] a very great one, in his own home, and offered him live rabbits each year; and every year, in the Moon of the Harvest, they danced with him and with other rattlesnakes they brought from the mesas, just as they do in Moqui even now. And they made *tinajas* and *ollas,* just as we do now, but better. These *tepulcates* that we find everywhere, are from them, and some are glassy, as no one knows how to make now.[3]

There was only one way to come to the top of Katzímo. On this side toward Acoma, a very great piece of the cliff had fallen, so that it leaned from the valley up to a very high cleft that ran

[1] "Wet-head" was one of the first terms of the Indians for the Christian Spanish, referring, of course, to baptism.

[2] Onomatopoetic name of the rattlesnake.

[3] The prehistoric Pueblos made a beautiful salt-glaze—a lost art now.

from the top of the mesa half-way down. When they first came to that place, they cut little holes for their toes and fingers, up that sloping rock and then up the channel of the cleft; and up this rock-ladder they brought the pine logs for ceilings and the adobe and other things to build their homes. It was very steep, as steep as the North Trail of Acoma; but they were not afraid, and they were not lazy. And up there they were happy, longer than any one can tell.

One summer, in the time of the harvest, all came down from the rock to gather their corn and beans, men, women, and children, with buckskin bags to bring the harvest home in. All but three women, who stayed behind because one was sick. And while they were all away at their fields, down in the Long Valley, there came such storms as no one ever saw; and the rains did not stop; and floods ran down all the cliffs of the Valley of Acoma, and the waters ran against the foot of Katzímo, and ate away the sands and rocks that grew there, and burrowed under the great rock that was their ladder. And it fell out into the plain, shaking the earth. When the storm was ended, the people crawled out from under the ledges where they had taken refuge in the further valley, and came home. But their Ladder Rock was gone, and from the top of the sand-hill to the mouth of the cleft was higher than a tall pine. So they could never get up there any more. Neither

ACOMA CHURCH AND BUILT-UP GRAVEYARD

THE ACOMA WATER SUPPLY

Photos by Chas. F. Lummis

DETAIL OF PUEBLO TERRACED ARCHITECTURE

invited my old friend Lidgerwood, inventor of the cableway, to that procession two hundred years ago, just as I would like to have taken the Acoma toilers of the year 1700 or thereabouts to some modern place where that wonderful old Scotchman's contrivance was moving mountains to fill valleys.

The people of Acoma naturally fit their romantic environment. They are picturesque, and have a dignity and thoughtfulness in keeping with their life. They do not differ from the other Pueblos, though I have found more of strikingly noble heads among them than in any other town. They are industrious farmers, with their fields and little orchards several miles down the valley and in the main valley of the San José. They have also little summer pueblos, next these farms, with little cliff-hanging houses. Their herds of horses, cattle, and sheep graze in these valleys, and on the mesas east and west. After the harvest there is a grand loading of the crop into Studebaker wagons, or in packs upon the patient burros; and the corn and pumpkins (sliced and dried), the wheat and grapes and other articles, are fetched to the foot of the great rock of Acoma, and then with infinite pains "packed" up the breathless sand-dunes and the rocky Horse Trail, to be stored away in the dark rooms of the lower

story. The grapes are hung from the smoky rafters, where they dry half-way to raisins, keeping still juicy for months. And there upon the great lone rock, seven thousand feet above the sea, the folk of Acoma pass their quiet contented winters with their simple crafts and innumerable religious rituals.

There are springs in the valley within two miles of the mesa, but the water supply of Acoma is strictly local. Several great natural hollows in the top of the cliff have been dammed at the outlet so as to make reservoirs, and smaller ones nearer the houses serve for washing. The drinking supply is almost entirely brought from the beautiful reservoir in a sandstone bowl of the south mesa. It is a picturesque and Oriental sight, as one could imagine, to see at sunrise the long line of maids and matrons trudging back from the pool over the broken surface of the south mesa, down the heavy steep sands of the dunes to the foot of the Horse Trail, and up that rocky stairway, walking stately, confident, hands at sides, and, poised on each shawled head, a brimming great *tinaja* of beautiful decoration.

"All the world is queer except me and thee, Ruth—and sometimes I think *thee*'s a little queer!" One of the first feelings and exclamations of almost every visitor to Acoma is: "How

strange! how Oriental! It does n't seem possible that we are in America at all!" As a matter of fact, it is these quiet Hano Oshatch, "the Children of the Sun," the people of Acoma, who might justly say: "These funny-looking pale foreigners, who dress uncomfortably and ugly, and can talk but one language and that a very harsh one, who come up here to look at us, or whom we see when we go to the railroad—where in the world can they come from? They certainly cannot be Americans! We have been here ever since the mountains grew, and we never saw such folks till lately." For *they* are the original, the First Americans; and their customs and their speech and their picturesque dress have been American, and almost unchanging, since the time our own ancestors ran bare-legged in skins through the woods of Europe. We never have had, and never will have, an American national dress; but the Pueblos have had one, without change of fashions, for a millennium or more. Their feasts and rituals are colored with pageantry of the Catholic church, but are in fact pagan and ancient—and American. The last two decades have notably affected their dress—and of course for the worse, as the change came from our inartistic civilization. Many of the men wear overalls now, in place of the old buckskin breeches or white cotton trousers. Fewer have abandoned the healthful and

comfortable buckskin moccasin for our clumsy brogan; some wear American coats; and a good many wear hats in place of the picturesque and more comfortable and more sanitary *banda,* a red kerchief about the head, which is really a better protection to the eyes than even a broad brimmed sombrero, and of course far better for the scalp. No one ever heard of a bald-headed Indian; but with a few generations more of our atrocious head-gear that evolution will be realized. Now and then one sees an Acoma woman pitifully changed from the beautiful national costume to an American dress—even to shoes and stockings—and it is a sight for the artist to weep over. Their own immemorial dress is a picture—the black *manta,* a blanket fastened over the right shoulder and dropping under the left arm, and pinned down the right side with big silver pins, and ending just below the knee over the *botas,* which are leg-wraps of buckskin wound spirally up from the buckskin moccasin and tied at the knee. Of course it is only about three hundred years since the Spanish brought sheep to New Mexico, and wool with them. It is only since then, when the nomad Navajos and the mesa-dwelling Moquis learned to weave it, that the woolen *manta* has been used, and the brilliant silk kerchief hanging over it down the back from the shoulders, and the bright worsted or China silk shawl to cover the head.

In prehistoric days the dress was of buckskin, beautifully fringed but not beaded; all the beadwork now so famous among some tribes of Indians of course dates only from the introduction of glass beads from Europe by the Spanish. This national dress of the Pueblos is beautiful, picturesque, hygienic, and eminently comfortable. American women who have donned it ("for a lark") have found it so easy and comfortable that they were loath to go back to their own garments. And when they try to secure for themselves a pair of the comfortable moccasins, they are likely to be very much surprised and a little mortified to find it almost impossible to get their feet into the moccasin of any Pueblo woman. Small and shapely hands and feet are the almost unvarying rule among the Pueblos, as they were among their ancestors, the cliff-dwellers.

Besides this costume, the Pueblo woman wears jewelry in barbaric profusion. She cares nothing for gold nor diamonds; but silver and coral and turquoise she has abundantly—three or four or half a dozen bracelets of silver, and a silver rosary of big hollow beads with alternating crosses and probably a very large pendant; and many strands of costly coral, and ear-rings of silver or of ancient turquoise beads strung in a loop; and perhaps another necklace of old wampum, with markers of spar or conch-shells or

turquoise; and many rings of silver, sometimes set with turquoise. They have their own silversmiths, who work cleverly with tiny forges and the simplest tools; and there are old bead-makers who drill little lozenges of turquoise with the bow-drill and string them, and round them by rolling and rolling the string of them interminably on a sandstone. On a feast-day you may imagine what a kaleidoscope of color these women make with their brilliant head-shawls and back-kerchiefs and black *mantas* and bright calico sleeves and snowy "boots" and glittering jewelry. The clothing itself is worth fifty dollars or more; and it is not uncommon to see three hundred dollars more in the jewelry.

A feast-day—a Day of the Saints, for the wise Franciscan missionaries realized that the immemorial ceremonies of these ancient people could not wholly be rooted out but might be diverted and directed to the new faith; and skilfully arranged each such aboriginal celebration in honor of the saint whose day came nearest. Each pueblo has many fiestas, of which the most important is generally that of its patron. Most of them celebrate the opening of the Mother Acequia or irrigating ditch, in the spring; and the green corn season; and the harvest. All are marked with strange, picturesque dances—not dances in our sense at all, merely "for fun," but cere-

© by Chas. F. Lummis

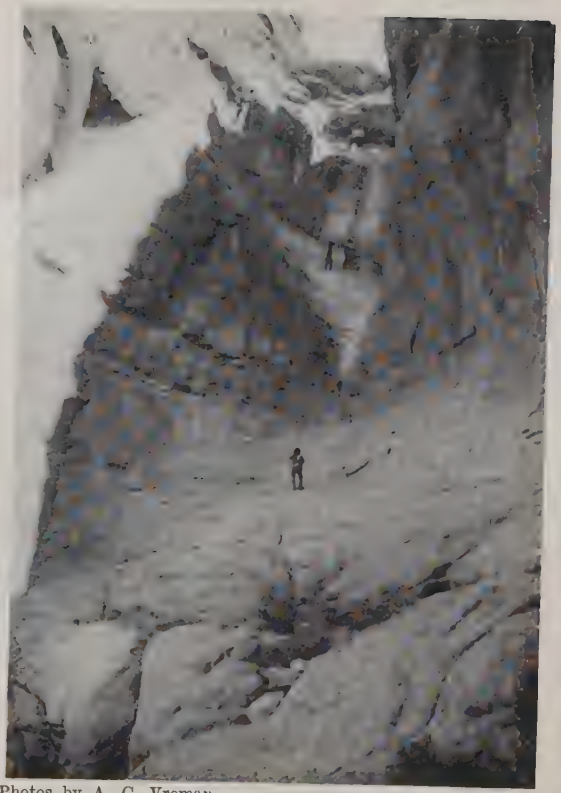
ACOMA—THE PATRONAL FEAST OF SAN ESTÉBAN

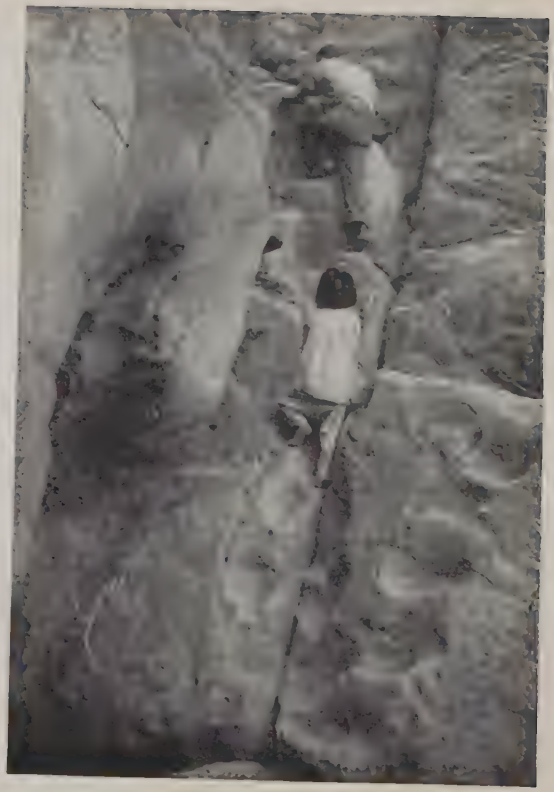
Bringing the Saint from Church to the Dance

monials of the deepest religious sentiment. Some are marked by races, as in the picturesque pueblo of Taos, or the wonderful Lenten Sunday relay-races, "the Chase of the Chongo," to which I have given a chapter in my "Land of Poco Tiempo." In nearly every pueblo—as in every Mexican hamlet—the Dia de San Juan, St. John's day (June 24), is marked by horse-races, again not of our variety. San Juan day in Acoma is most picturesque of all; a brilliant, gallant spectacle worth coming across the continent to see. Of course the celebration begins with mass in the great old church; with solemn processions and the firing of muskets and the wild tattoo of the old bell from Spain, belabored not by a common bell-ringer, but by a rhythmic, athletic youth with a cobblestone in his fist. There are dances in the bed-rock "street" by strangely decked men and women, stepping by twos to the beat of the great *tombé* and the resonant chorus of official chanters. Then the wild "*gallo* race." The *gallo,* a living rooster, is suspended on a cord between two poles held by stalwart youths standing on opposite sides of the course. It is an obvious adaptation of the medieval joust, when knights spurred with lance in rest to catch the suspended ring. Swinging in, one by one, from the wide southern "street," the horsemen come clattering down toward the mark. The two holders drop the sus-

pended *gallo* low enough to be within easy reach until just as the horseman is about to catch it—and then snap their poles aside so that the bird flaps away up overhead. Sometimes a rider swinging high in the saddle catches a feather, but no more. But at last, either because it is time for the real struggle, or perhaps because the rider is favored by the pole-holders, he catches the swinging bird by the neck, the cord snaps, and off goes the winner amid a roar of delight and the thunder of pursuing hoofs.

It would be a wild race on any course; but over the uneven and slippery rock top of the mesa, and headlong down the wild Horse Trail, each rider might qualify for a Mad Anthony Wayne—galloping, jostling, almost trampling one another, striking a shower of sparks from the echoing rock. The chase sweeps down the steep-pitched sand-dunes, and along and over and around them, and between outlying citadels of rock, and out into the grassy plain and back—the winner whirling his prize around his head with defiant whoops. An equal centaur grapples him from the left, and another is on him from the right, and he swings his feathered club hard in their faces and over their shoulders, and spurs to get loose, and the three horses flounder in the deep, fine, sliding sand. Finally one assailant, with a swift clutch, gets a hold upon the swinging fowl and lurches





Photos by A. C. Vroman

PREHISTORIC TRAILS

Left—F. W. Hodge and party ascending Katzmo by the ancient path
Right—The Canmo del Padre, Acoma; Geo. Parker Winship climbing

mightily aside, and after a scuffle he breaks loose with a leg or wing—instantly to be pursued in his turn by a pack of other riders; and others yet close in upon the still struggling two, and there is another violent division of the bird, and each man who captures a fragment spurs out into the valley, hounded by relentless rivals. They smite one another full force across the face with the feathered weapon, and dark eyes flash, and blood trickles down; but big white teeth are shining in the gallant joy of the generous strife. I have never known one of these combatants to lose his temper. If he did he would be ostracized by his people. For primitive man is a "good sport."

The "rooster race" lasts till the chicken is so thoroughly dismembered that no fragment is left big enough to fight with or for; and then, reeking with bloody sweat, the knights of this strange tournament turn winded horses to the precipitous sand-slope and up the Horse Trail, and turn them into the big corral back of the venerable monastery. Later, with little jars of water, the horsemen ride in and out among the *caballada*, and, filling their mouths with water, spray it over their favorite mounts—in their belief, a sovereign remedy.

Generally the *gallo* race by horsemen is preceded by a similar contest on foot. A long line forms far up the rock street; and the *tombé*

strikes up its rhythmic pom! pom! p-pom! and the *alguacil* (sheriff) shouts a stentorian *"Hai-ko!"* —and the file begins prancing forward in a curious high-stepping half-dance. The youngest runners are in front—fat, dimpled lads of three or four, and back on up to the teens and to maturity. Each carries a little switch, and, as he passes under the suspended rooster, leaps up and strikes at him. The pole-holders are watchful—and the bird more so—and it is long before any one scores a touch. When all have passed on under the target and down the street, they re-form and double back in single file, still hopping, still whooping, each doubly hard, as he swipes at the bird, and so back and forth several times; till at last some particularly active young brave, with a tremendous leap aloft clutches the suspended bird by the head, snaps the cord, and is off like a jack-rabbit down the street and around and along the houses, with all his fellows in full cry behind him. Such running, doubling, dodging, ducking, were never surpassed upon the foot-ball field. But at last the runner is overtaken; and pursues the same wild fight as he whirls and belabors the crowding pack with his feathered bludgeon. It is the same story over again as with the horseback struggle; but with the difference that generally those who capture fragments of the chicken will turn them over to some favorite younger brother,

who is in turn pursued by his little mates, and four- and five- and six-year-olds reënact the scuffling and the belaboring of their elders.

And last of all comes the picturesque *Tse-aí-tee-ah,* the bread-giving. The *gallo* racers from the plain ride up to the first house in town calling for their reward; then come the maids and matrons from within the second story and forth upon the platform-roof of the lower rooms, with flaring great baskets heaped high with gifts of their nutritious bread baked in special ceremonial shapes. And legs of mutton, and *tortillas* (unleavened pancakes), and pieces of bright calico, and little clingstone peaches, and other articles come hailing down upon the huddled cavalry. A short-stop in a major league would respect the dexterity with which they catch these valued missiles; and if anything misses their quick clutch and rolls upon the bed-rock under their horses, some of the Navajo visitors (of whom a host come to gather the crumbs of any such feast) dive under the bellies of the surging horses, with an impunity no less notable. And so from house to every house in the pueblo the cavalcade makes its noisy stages, and at each is received with generous largess. And as the sun falls red upon the far pines of the Black Mesa, and the ineffable New Mexico twilight drifts in, happy groups chat and laugh on the house-tops; and a long file of Navajo

visitors clumps away over the rock toward the Horse Trail, the squaws bending in their saddles under blankets bulging with the bread and other goodies they have gathered up in this Acoma day of the Saints.

Once I came, with the big camera, to an Acoma Saint's day. Mass was going on in the great church, when I approached the door. A big *Teniente* turned in the doorway and roared "*Há-ko!*" "Out of here!" He kept bellowing in Quéres, as I beckoned him aside. Didn't he know I *always* took pictures in A-co? Weren't he and all the Acomeños my friends? What was the matter? The matter was too much red Isleta wine. The Governor came, after mass, to apologize, adding: "Thou shalt see!" That afternoon the *Pregón* (official herald) summoned all the pueblo to the Dance street, and two Alguaciles brought me. The Governor, from a housetop, proclaimed how his Lieutenant had shamed them —drank too much, disturbed the holy *Misa,* and insulted a friend of A-co. The big official was then stripped of his calico shirt; and there, upon the housetop, before all Acoma, the two sturdy Alguaciles with rawhides gave him fifteen echoing lashes apiece on his bare back.

CHAPTER XVI

THE ENCHANTED MESA

The Vindication of an Indian Legend—The Story of the Fated Cliff Town, Cut Off from the World by a Cloudburst

THE fit scholar never despises an Indian legend as a mere fairy-tale. It is always true, though it may need special side-lights by which to interpret its actual meaning; precisely as we have come to a real understanding of the "history" compiled by the world's first great editor, the books of Moses. It is through Indian tradition that we have scientifically traced and established the "wanderings of Cochití" from the immemorial cave-dwellings of the Tyuonyi, through successive habitats, to the present pueblo of that name beside the Rio Grande where it emerges from the grim Black Cañon; and thus we have traced several other pueblos from prehistoric locations to the sites they occupy to-day. Bandelier, greatest of our documentary historians, proved beyond peradventure the indis-

pensable value of aboriginal tradition in connection with the Spanish archives, and in elucidation of them.

The most notorious and sensational confounding of a would-be scientist in the annals of American scholarship befell a college professor who "spoofed" a tradition of the people of Acoma.

Three miles northward down the valley from the present "Sky City," which I have just sketched so inadequately, towers the still taller and more beetling and less weathered mesa of Katzímo—the "Enchanted Mesa." It is most notable among all the awesome examples of the infinite toil and inconvenience to which these peace-loving First American farmers were willing to go for the sake of security from the marauding nomads about them; and the tradition of its fate—now fully vindicated by science—is the most explicit and most romantic story we have of any of the cliff-dwellers.

In 1884, on my "Tramp Across the Continent," I first heard the legend of the "Mesa Encantada" from that noble and wise old Pueblo statesman, Martín [pronounced Mar-teen] Valle. Later we often talked of Katzímo, and rode about its base, and clambered up its wild talus, a great escarpment of big blocks fallen from the sandstone cliffs, and sand from their waste; and in the very month

© by Chas. F. Lummis

MARTÍN VALLE, SEVEN TIMES GOVERNOR OF ACOMA, WHO FIRST TOLD ME THE STORY OF THE ENCHANTED MESA

Photo by A. C. Vroman

KATZIMO, THE ENCHANTED MESA, FROM NORTHWEST

could the three women on the top come down. And there they died, after a long time—except one who threw herself off the cliff. And then the people came to this Acoma that is to-day, and built it, a town like the one they had lost.

I published the story of the Enchanted Mesa in 1885 and many times later. It very deeply interested me, with my infatuation for Acoma and its quaint people. I haunted the foot of that bewitched rock until exhaustive search proved the inaccessibility of the summit. It was reputed to be a thousand feet high. The great gorge up which tradition said the ancient trail led to the top from the ladder rock is visible for miles; but from its lower lip (it is gouged out like a huge horn of plenty) down to the top of the talus was then fully fifty feet; and no ladder could have been made nor raised to overcome that dizzy gap. I came back year after year, and once, on the north end of the mesa, won about fifty feet up from the talus in a narrow cleft; but above me was still two hundred feet or more of precipice. In thirty years of erosion the talus has grown everywhere —mostly by big blocks split by frost from the cliff—and particularly under the vast spout where was the prehistoric trail. By 1895 it was not difficult to clamber from the peak of the talus to the lip of the gorge.

In 1897 Professor William Libbey of Princeton

College felt a mission to explode this Indian "fairy-story," which had become of international note and had been accepted by archæologists and historians from Bandelier down; and in July of that year, after a month of interesting "publicity" concerning the myth and the expedition to disprove it, he came to the Enchanted Mesa with a little party of reporters and a car of paraphernalia borrowed from the Life-saving Service—a mortar for throwing the life-line, and miles of rope, from the slenderest "carrier" up to three-inch hawsers. Also a "bo'sun's-chair." With much difficulty this ponderous equipment was transported in lumbering farm-wagons over the gullied trails from the railroad at Laguna, sixteen miles away. The ropes were coiled, the mortar trained, and "after four days of hardest work," a life-line was shot across the narrow prow of the eastern cliff, and heavier ropes hauled over by tugging horses at the farther side; and at last the great hawser was safely anchored over the rock. Again the horses walked away, and Professor Libbey, strapped in the bo'sun's-chair, and carrying his camera and speaking-trumpet, was hauled to the top of the cliff; and after him, in the same fashion, one of his newspaper companions. They had not proceeded far upon the summit when they were balked by a deep chasm (across which, not long afterward, I tossed my six-year-old daugh-

ter), and lost three hours in having a ladder brought from Acoma and hauled up to the top of the cliff to bridge this four-foot crevice. Over this ladder Professor Libbey passed, but his companion did not venture.

There were no three-story houses, no temples. The explorer saw and photographed a great splinter of rock about three feet long, stood on end, and supported by other rocks piled about it, and was somewhat puzzled by this monument, but "concluded it was a freak of erosion." He picked up numerous shards, smooth on the concave side and ribbed on the other—the familiar "corrugated" pottery of the ancients—and carried a handful of them back to the ladder to show his friend, who coincided with him that they were also "freaks of erosion." The summer afternoon was well spent, and dark thunder-heads were piling up around Mount San Mateo, and there was prospect of a mountain rain. Professor Libbey and his companion hastened back to the plain by way of the bo'sun's-chair and posted to Laguna to telegraph a waiting world that "the Enchanted Mesa was Disenchanted. Professor Libbey had surmounted that inaccessible cliff and was convinced that no human foot had ever pressed that lofty summit before."

This was July 23, 1897. I was in San Francisco at the time, and chanced to be in the "Chronicle"

office next night when the Associated Press despatch came, telling how Professor Libbey had "disenchanted" Katzímo; and I was asked by George Hamlin Fitch for comment. The Sunday "Chronicle" of August 1 carried a full-page illustrated article defending the Indian legend, calling attention to the facts that Professor Libbey was entirely unfamiliar with the Pueblo country and that his report was not convincing, that his investigation of a few hours was obviously inadequate, that he had overlooked very significant evidences which corroborated the story, that this serious and circumstantial tradition of the Acoma people could not be discredited so easily—nor by anything less than competent investigation by scientists familiar with the Southwest, as for instance Frederick Webb Hodge of the Bureau of Ethnology; and expressing my conviction that such scientific search would confirm the truth of the legend of Katzímo. At the same time I wrote my binders in Los Angeles to build me a special scrap book, eleven by twelve, of three hundred pages, and to back-title it "The Enchanted Mesa." My prophetic eye foresaw in this controversy "literature" which would be voluminous and worth saving. And this was no error. It is an extremely interesting volume, and a long one; for the new "tragedy of the Enchanted Mesa" was noised in many lands and many languages. The dramatic

prologue developed into a no less dramatic sequel. An enemy laying out a plot to involve the chief actor in confusion could hardly have been so ingenious or so relentless as was the actor himself. The brief dispatches from Laguna were followed quickly by long articles in Eastern newspapers by Professor Libbey and his companions, telling of the arduous conquest of the cliff, and of being lifted to its top "on a spider web" (the ship's hawser), and of the bareness of the summit and the "total absence of any indication that human foot had ever pressed that lofty summit before." There were also complacent comments upon the "fate of romance under the acid test of investigation"; as one man colloquially put it: "Science has again met Poetry, and sent her to the ropes."

Professor Libbey "disenchanted" the Enchanted Mesa on July 23. On September 3 following, Frederick Webb Hodge of the Bureau of American Ethnology vindicated the Pueblo legend and disenchanted the tenderfoot doubter. He was on an archæological expedition in New Mexico, and, upon learning of the assault upon our treasured tradition, bent his steps to Laguna and had an extension-ladder made in six six-foot sections. With this and light ropes, and the veteran United States Deputy Surveyor, Major George H. Pradt, for many years a resident of the Laguna pueblo,

A. C. Vroman of Pasadena, an expert photographer, and a Mr. Hoyt of Chicago, and three Acoma Indians, he reached the top of Katzímo in a little more than three hours, with ponderous camera, surveying instruments, etc.—while it took Professor Libbey four days to reach the top with his life-saving apparatus. Hodge and his party clambered up the precipitous talus, 224 feet above the plain, and clambered over the lip of the great "cornucopia" gorge, and up its sloping throat, finding still visible, after all these centuries of erosion, the prehistoric toe-holes at many points. It was an irony of the drama that Professor Libbey photographed this very gorge, and that the steps of the ancient trail are visible in his very photograph! The Hodge party spent twenty hours on the summit, passing the night there, exploring thoroughly, photographing and surveying it; and Major Pradt made a scale map. Within five minutes after their arrival on the top, they found indisputable proof that the venerable legend was true—that Katzímo was once inhabited, and that the Enchanted Mesa had lost none of its romance. The houses had long since crumbled away under the torrential rains of many centuries, and washed down over the cliff, whose top slopes to each side. The talus itself is enough to prove the legend to any expert archæologist, not only for its great mass, all of which has been

© by Chas. F. Lummis

DAVID STARR JORDAN AND PARTY, WITH THE AUTHOR, ON SUMMIT OF THE ENCHANTED MESA

(Great stone "Punch" at left of gorge)

washed down from above, but because it is full of potsherds of the ancient pottery which has not been made in centuries, and of glazed jars of a lost art; and building stones; and broken arrow-heads, and spalls of obsidian and agatized wood, from which arrows were made, and occasional beads and stone implements. These could not have "eroded *up*" from the plain, very well! Of course they all came from the top. And on the summit Hodge and his party found arrow-heads, stone axes, fragments of earthen cooking-pots and water-jars, shell beads, and other artifects lodged in crevices, or caught in angles of the rough bedrock, so that they had not been washed off the cliff. A month later the November, 1897, issue of my magazine, "The Land of Sunshine," contained an authoritative article by Mr. Hodge, titled "Katzímo, the Enchanted," recounting the evidences discovered by his exploration and concluding: "Katzímo is still enchanted. The lore of a millennium is not to be undone by a few hours of careless iconoclasm." Thenceforward for some time, the battle raged. Professor Libbey made much of his exploit in numerous articles in newspapers and reviews, including a facetious story of "A Disenchanted Mesa" in "Harper's Weekly," in which he dwelt upon the frivolousness of Indian narratives. "The capacity of the native for spinning yarns has always been noted"—and he even

fancifully reconstructs the scene of Acoma Indians, at their first contact with the Spaniards, inventing this fable to please them! And how "the medicine man of the future will now have to publish a new and revised edition of the story, for . . . an inquisitive scientist by the name of Libbey had been up there and found the summit had never been inhabited." Still more facetiously he closed this signed article:

> All of which merely goes to show that he was in reality blinded by the spirits, and that his remark that the mesa was disenchanted was an illusion of the mind that had been unduly excited by his trip up into the thin air fit only for spirits to breathe.[1]

"All of which goes to show," also, that one may fail as an explorer but shine as a prophet.

On June 22, 1898, my own turn came at last. The "cruel war was over"—after raging for months in newspapers, weeklies, magazines, and scientific publications. The story of the Enchanted Mesa had been fully vindicated, and with multiplied publicity. On that date, with Hodge's ladder, I took up to the summit, in two hours and ten minutes from the plain, David Starr Jordan, president of Stanford University, and his wife; Theo. H. Hittell, historian of California (then sixty-eight), and his daughter; Major Pradt; my six-year-old daughter, Turbesé; two young men

[1] Harper's Weekly, Aug. 28, 1897.

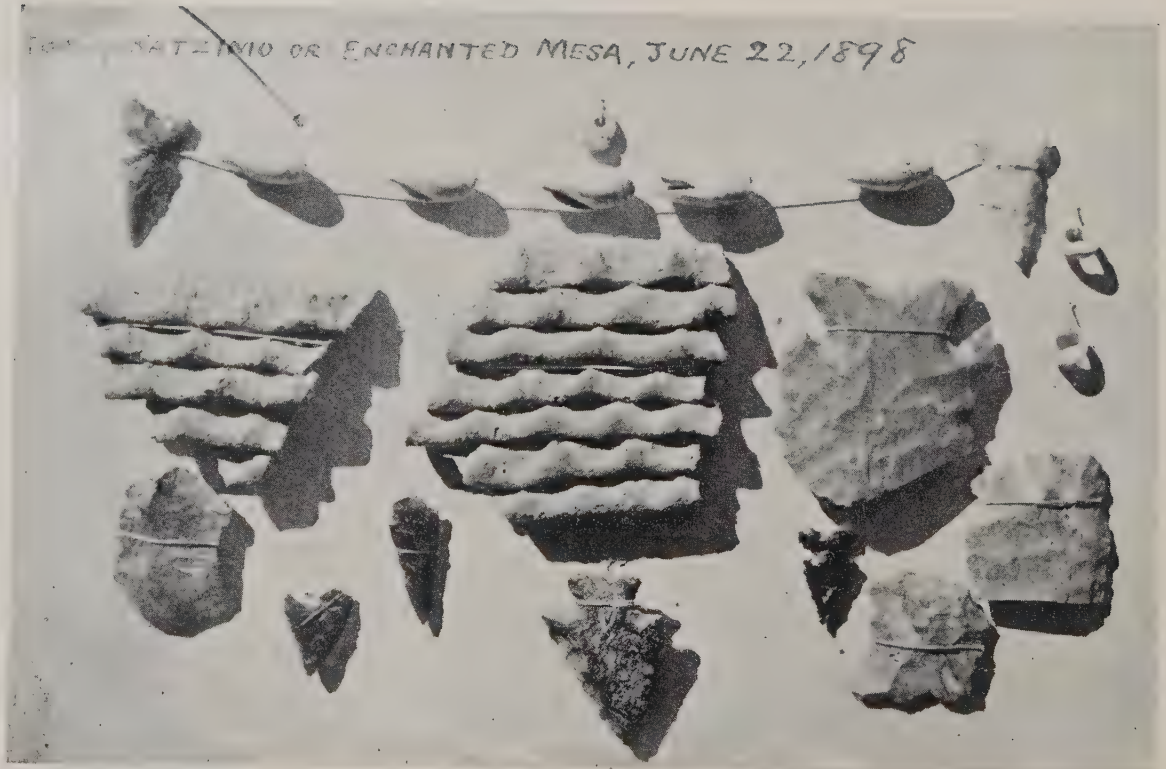


Photo by Chas. F. Lummis

SOME PROOFS OF HABITATION—POTSHERDS, AGATE ARROWHEADS AND SPALLS, BEADS OF SHELL AND TURQUOISE

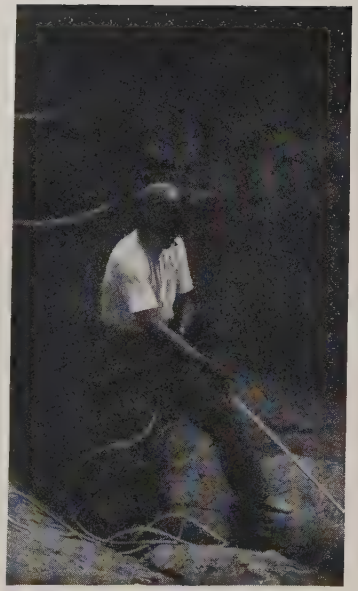
from San Francisco; an intrusive missionary; Toribio Tsikina, an official of Acoma; and six younger Indians. Dr. Jordan, who has written frequently of this experience, compared it with his ascent of the Jungfrau. Using Mr. Hodge's thirty-six-foot extension-ladder, which had to be socketed in niches scooped from the rock and held vertically to the next higher shelf, with a man at each side and one behind, I clambered up with a light strong rope, fastened it to a crag on the next shelf, and dropped the noose over the ledge, to be put around the shoulders of each successive climber, who half climbed and was half hauled up the swaying, creaking ladder. Turbesé was the first to be boosted to the very top. The bulky camera and glass plates were hauled up last of all from the Indians below.

We remained on the summit till the sun was low, scouring its twenty-five hundred feet of length—and not ignorantly. We knew ancient potsherds when we saw them, and we saw many. Virtually every member of the party found some. The great cedars of the summit, grown, of course, since the ancient town was deserted, were nearly all dead—starved, as the soil had washed away from about their roots so that the old mesa top is virtually clean as a swept floor. It is only in crannies of the weathered rock, where they could not be "washed overboard" by the cloudbursts,

that we found arrow-heads, shell beads (made of shells that had come by barter from the Gulf of California), turquoise beads and a pendant, and agate spalls that had come two hundred miles by prehistoric barter from the petrified forest of Arizona; showing that arrows were not only used but *made* on the mesa's top. A stone ax and a smoothing-stone (a porphyry pebble polished on one side by years of use in smoothing pottery before firing) were also found. Professor Libbey's monument "of erosion" was there, and another one, and, in two places, heavy sandstone slabs which were unmistakably once the foundation of houses. I made many five-by-eight photographs. The descent of the cliff, like the climbing, would have been dangerous except with expert mountaineers; but with them there was no difficulty.

In an article on their six days of Acoma and the *gallo* race and the Enchanted Mesa, David Starr Jordan wrote:

> But it is not for me to write of Acoma, her charms or her surprises. With us was one who knew Acoma and loved her, and who has written of her in the spirit of affection. And we have been glad to know him as well as the country of his adoption. His matchless skill in wood-craft, in mountain-craft and Indian-craft, all this was at our service, and with it and above all was his genuine love for nature and human nature—for the honest soul in man or woman, whether Saxon, Spanish or Indian—which has made him at once the



Photos by Mary A. Drake

HAULING MY PARTY UP KATZIMO

"MR. PUNCH,"
250-foot Guard of the Trail

MAP OF KATZIMO

By Maj. Geo. H. Pradt

Ancient trail in bay marked by arrow

historian, the poet and the interpreter of the Pueblos of New Mexico.

Since then I have hoisted and boosted several parties up Katzímo, with helpful rope and Mr. Hodge's indispensable ladders. In June, 1906, I got my daughter Bertha and my wife from the wagon to the top in one hour and forty-five minutes, with the big camera; and in August, 1909, I took Mrs. Mary A. Drake, her daughters Ruth and Mary Louise, her sons Irving and Robert, my nine-year-old son Quimu, and our driver—all eight, in an hour and forty-five minutes—though we were delayed twenty minutes by the loss of one of the keys to the extension-ladder, so that I had to lash the last section. On both these visits I found *tepulcates* and agate spalls. An arrowhead I found on my first ascent is one of the handsomest I know—a strong blade of rich, translucent moss-agate.

As may be imagined, the old Indians were gratified at the complete vindication of their ancient tradition. Their reverence for the Enchanted Mesa is more deep than ever. The claim of G. Wharton James: "They tell me this is not the *real* Katzimo, which maybe they will show me," is of the fabric which has made him more known than credited in the Southwest. Perhaps "they" are his mythical "Tata Lorenzo" and Governor "Rio Garcia!"

CHAPTER XVII

THE RIVERS OF STONE

Great Streams that Ran as Fire and Lie To-day in Flinty Rock—Vast Volcanic Checkerboard of the Southwest

IF a line were drawn from Lake Manitoba to the Gulf of Mexico at Galveston, approximately halving the United States, and we could get these two halves on a small enough scale to compare them side by side, we should find that Nature herself had already made as striking a division. We should find such a difference between them as we now scarcely realize. Broadly speaking, we should discover the eastern half to be low, rather flat, wooded and wet; the western half many times as high above sea-level, extremely mountainous, generally bare, and phenomenally dry. Its landscapes are more brown than green, its ranges barren and far more bristling than those of the East, and its plains vast bleak uplands. Its very air is as different from that of the eastern half as white is different from gray. It is many times lighter and many

times clearer, and incomparably drier. It is a sort of wizard air, which plays all sorts of good-natured tricks upon the stranger. Delicious to breathe, a real tonic to the lungs, a stimulant to the skin, it seems to delight in fooling the eyes. The heavens that arch Colorado, New Mexico and Arizona burn nightly with such millioned and magnified stars as the East never dreamed of. Through day's magic clearness one sees three times as far as in the heavier atmosphere of the East, and the stranger's estimates of distance have all to be made over. It is no uncommon thing for the traveler to deem an object but five miles off when it is really twenty miles or even more. And a still more startling trick of this strange atmosphere is that it very frequently makes one see things which do not exist at all. It is a curious paradox that this atmospheric freak, of which you know as the mirage, is confined to dry countries—deserts, in fact—and that the illusion it most commonly presents is water! Towns and mountains and animals are sometimes pictured, but oftenest it is a counterfeit of water that is shown the weary traveler in a land where there is no water, and where water means life.

The very landscape under this wonderful air has an appearance to be found nowhere else. Its barrenness seems enchanted; and there is an unearthly look about it all. Watercourses are ex-

tremely rare; in a quarter of a continent there are only three good-sized rivers, and it is in places hundreds of miles between brooks. In a word, the country seems to have been burnt out—it reminds one of a gigantic cinder.

It is true that there are in this area a great many rivers of a sort not to be found in the East —and such strange rivers! They are dark brown, or black as coal, and full of strange, savage waves, and curious curling eddies, and enormous bubbles. The springs from which they started ran dry centuries ago; a mouth not one of them ever had; and yet their black flood has not been soaked up by the thirsty sands. There lies the broad, wild current, sometimes thirty feet higher than its banks, yet not overflowing them; a current across which men walk without danger of sinking, but not without danger of another sort; a current in which not fishes but wild beasts live—often even one river on top of another!

You will wonder what sort of rivers these can be. They are characteristic of the West—there are none of them in the East; but in an area larger than that which holds three fourths of the population of the United States they are a part of the country. They line hundreds of valleys. If the rest of the landscape suggests fire, they suggest it ten times more. And rightly enough, for they have seen fire—nay, they have been fire. They

are burnt rivers, which ran as fire and remain as stone. By this time you will have guessed what I mean; that these rivers of stone are neither more nor less than lava-flows. They are stranger than that African river of ink (made by the combination of chemicals soaked from the soil), and incomparably more important, for they have to do with causes which much more nearly affect mankind. The great difference between the East and West is that the latter is volcanic country, while the former is not; and nearly all the striking dissimilarities of air, climate, landscape, and even customs of the people arise from this fact. The West has been heaved up by the fires within, and burned out and parched dry—so dry that even the sky feels it. The rainfall is far less than in the East; and to make their crops grow the Western farmers have to flood their fields several times in a season from some stream or reservoir.

As we go south this volcanic condition becomes more and more predominant. The vast Southwest is a strongly volcanic country, and covered with embers of its old fires. There are no active volcanoes in the United States, but in the Southwest there are hundreds of extinct ones, each with its one to a dozen black rivers of stone. These volcanoes are not large peaks like the giants of Central and South America; most of them are small cones rising but little above the surround-

ing plains, some not more than fifty feet. Yet so elevated is the whole country there that the top of such a cone is frequently much higher above the sea-level than the summit of Mount Washington.

Of the many volcanic regions I have explored in North, Central, and South America, one of the most interesting is in the Zuñi Mountains of western New Mexico, and along their slopes. All through the range—whose tops are over eight thousand feet in altitude—are scattered scores of extinct volcanoes; and their lava-flows have overrun many thousands of square miles. The range is covered with a magnificent pine forest—a rare enough thing in the Southwest—partly growing upon ancient flows, and cut in all directions by later ones. The soil everywhere is sown with jagged fragments of lava, which makes travel irksome; and in the picturesque Zuñi Cañon which traverses the range is a singular sight, where the lava, too impatient to await outlet by a crater, boiled out in great waves from under the bottom of the cañon's walls, which are sandstone precipices hundreds of feet high.

The largest crater in this range is about two miles south of the lonely little ranch-house at Agua Fria. It is a great, reddish-brown, truncated cone, rising about five hundred feet above the plateau, and from three sides looks very regular and round. Around it are the tall pines, and

a few have even straggled up its sides, as if to see what it all means. But they have found it hard climbing, and cling upon its precipitous flanks as if disheartened and out of breath. Nor can one blame them. To the top of that crater is one of the very hardest climbs I know; the ascent of Pike's Peak did not tire me nearly so much. The whole cone is covered several feet deep with coarse, sharp volcanic ashes, or rather cinders—for each fragment is as large as the tip of one's finger. The slope is of extreme steepness, and this loose covering of scoriæ makes ascent almost hopeless. The climber sinks calf-deep at every step; and, worse still, at every step sets the whole face of the slope, for a rod around, to sliding down-hill. No one can go straight up that arduous pitch; one has to climb sidewise and in zigzags, and with frequent pauses for breath; and it is a decided relief, mental as well as physical, when one stands at last upon the rim of that giant bowl.

A strange, wild sight it is when we gain the edge of the crater. A fairly terrific abyss yawns beneath us, an abyss of great depth and savage grandeur. Its bottom is far lower than the level of the country around the outside of the cone; from that rim to the bottom of the crater must be eight hundred feet. In shape the interior is less like a great bowl than a great funnel. The rim is

very narrow—in many places not more than six feet across—and terribly rough. The rock is cooked to an absolute cinder and is more jagged than anything familiar to the East. Imagine a million tons of rock exactly like one great "clinker" from a furnace, and you get some idea of it. Tall, weird cliffs of the same roasted rock surround the crater a few hundred feet below the rim; and below these again is the long, swift slope of scoriæ to the V-shaped bottom. Under the eastern cliff is a strange, misplaced little grove of cottonwoods, which seem ill enough at ease in that gruesome spot—their roots clutching amid the ashy rocks, their tops hundreds of feet below the rim. Here and there in the cliffs are wild, dark-mouthed caves; and from these long, curious lines lead across the slope of cinders. They look like tracks across a sand-bank—and tracks they are, though one would never look for foot-prints in such a forbidding chasm. But, oddly enough, this dead crater is the chosen retreat of more than one form of life. There are no other cottonwoods in a great many miles except those I have mentioned; outside the crater it is too cold for this shivering tree. And this same grim shelter has been chosen by one of the least delicate of animals —for those tracks are bear-tracks. Several of these big brutes live in the caves of the crater and of the lava-flows outside. The Agua Fria region

is a great place for bears; and at certain times of the year they are an enormous nuisance to the people at the rancho, actually tearing down quarters of beef hung against the house, and very nearly tearing down the house with the meat. Several have been killed right at the house. A few days before my last visit to the crater one of the cowboys, a powerful young Ute Indian, was herding the horses near the foot of the cone when he saw a huge black bear scrambling up the acclivity. A good shot at nearly five hundred yards brought Bruin rolling to the foot of the cone, quite dead. His skin was an imposing sight when tacked upon the outside of the log-house to dry, for it reached from the ridge-pole to the ground, and then had several inches to spare. Besides the bears, the coyotes, wildcats, and mountain lions which infest that region, all make their homes in the caves of the *mal pais* [1] or lava "bad lands," the general name in New Mexico for lava and other volcanic areas. It is noticeable that only such animals as these and the dog—some creature with cushioned feet—can live or travel in the *mal pais*. Anything with hoofs, like the deer or antelope which abound there, or the cattle and sheep which also range those mountains, cannot long tread those savage-edged rocks.

[1] Not in the Spanish dictionaries, but universal in New Mexico, and already used by Vetancurt in his "Teatro Mexicano," 1698.

The funnel of the crater is not perfect. On the south side the huge bowl has lost part of its rim. The crater is about seven hundred yards across the top, and nearly three hundred yards deep; and you may imagine that it was a rather warm and weird time when this great caldron was full to the brim with boiling rock. A terrific potful it must have been, and doubly fearful when that stupendous weight burst out the side of the pot and poured and roared down the valley a flood of fire. Think of a lake of lava so heavy that it simply tore out a mountain side eight hundred feet high and five hundred feet thick at the bottom! The break in the crater is in the shape of a huge irregular V, nearly a thousand feet across the top, and over five hundred from top to bottom; and all that great slice of solid rock, weighing millions of tons (for it takes only a cubic yard to weigh a ton), was knocked out as unceremoniously as though a giant had cleft it out with an ax.

This is the sort of spring in which the rivers of stone had their source; and this particular crater fed many enormous streams. Of course it is many centuries since this grim spring ran dry; but we can judge very well how it acted when it sent out its strange hot floods. First, above the soughing of the pines rose deep, pent-up rumblings, and the solid earth rocked and shivered. Then there was a great explosion just where that still brown cone

stands to-day, and this great wart was heaved up from the level plateau, and a vast cloud of steam and ashes sprang far into the sky. Then the molten flood of rock rose in the great bowl, and brimmed it, and ran over in places, and boiled and seethed. And suddenly, with a report louder than a hundred cannon, the wall of the crater broke, and that resistless deluge of fire rolled like an avalanche down the valley, plowing a channel fifty feet deep in the bed-rock at its outlet, mowing down giant pines as if they had been straws, sweeping along enormous boulders like driftwood, and spreading death and eternal desolation for leagues around. A flood of any sort is a fearful thing. I have seen a wall of water ninety feet high sweep down a narrow pass, at the bursting of a great reservoir at Worcester, Massachusetts. It cut off oak-trees two feet in diameter and left of them only square, splintered stumps. A five-story brick building stood in the way, and quicker than you could snap a finger it was not. Iron pipes that weighed a thousand pounds floated on that mad flood for a moment! And what must it be when the breaking dam lets out an avalanche of molten rock in a wave five hundred feet high! And fancy the sound! I have stood within 15 feet of the turret, in target-practice on the super-dreadnaught "New Mexico," while her 14-inch guns roared by threes; and an hour of it gave me

"shell-shock" for a week. But if all 12 of her hundred-ton cannon had belched at once, it would have been a mere "fizzer" to the shattering blast of that bursting crater.

That first outrush must have been a sublime thing. But even more than water, a lava stream begins to lose force as it gets away from its head. It is much thicker than water at the start, and with every mile it grows thicker still. Soon it runs very much like cold molasses—a sluggish, black, unnatural sort of stream, with its middle higher than its sides and the sides higher than the banks. The process of cooling begins very quickly and goes on rapidly. The "river" runs more and more slowly; and along its upper course (if the eruption has ceased) a shell will begin to form within a fortnight. So here is the strange phenomenon of a river running inside a stone conduit of its own making. The shell becomes hard enough, long before it is cool enough, to walk upon; and within, the fiery flood still pours along. A great deal of gas and steam is imprisoned in the molten flow. Sometimes it only makes huge bubbles, which remain frozen in the eternal stone. I have found these bubbles ten feet in diameter—curious arched caves, in which a whole party might camp. But if the volume of gas be too great, terrific explosions occur; and in places the top of the flow for a hundred acres is rent into a

million fragments so sharp-pointed that no creature can cross them.

The chief river of stone from this crater is about fifty-seven miles long, and its black, unmoving flood covers some four hundred square miles. It runs south for a few miles from the crater, then makes a great bend to the east, and, passing the beautiful *rincon* [1] of Cebollita, runs to the northeast until it unites with a smaller flow in the valley of the San José. In places it is a dozen miles wide, and in some narrow passes not more than a mile. At the bend the hot, sluggish current actually ran a mile or two up-hill, in its reluctance to turn a corner.

Not far from this elbow in the stone river is a very interesting spot. The Pueblo Indians have dwelt for unknown ages in that part of New Mexico; and on a fine rock bluff at Cebollita is one of the handsomest of their prehistoric ruins—a large stone pueblo surrounded by a noble stone wall. This fortified town was already deserted and forgotten when Coronado came in 1540. The Queres Pueblos have still a legend of the *Año de la Lumbre,* or "Year of Fire." They say their forefathers dwelt in these valleys when the lava floods came and made it so hot that all had to move away; and there is a dumb but eternal witness to the truth of their story. A few miles from Cebol-

[1] Corner, bay.

lita were some of their small, separate farm-houses in the pretty valley, and through one of these a current of the stone river ran. There stands to this day that ancient house, long roofless but with strong walls still; and through a gap in them and over the floor lies the frozen black tide.

There are two islands in this peculiar river, and as peculiar as itself. Instead of rising above the flood they are below it—lonely parks with grass and stately pines, walled with the black lava which stands twenty feet above their level. The largest of these parks contains about twenty thousand acres. There is a narrow trail into it, and it is used as a pasture for the horses of the ninety-seven-thousand-acre A.L.C. ranch. There are only two trails by which this lava-flow can be crossed by men or horses. Everywhere else it is as much as one's life is worth to attempt a passage. No one inexperienced can conceive of the cruel roughness of these flows. The strongest shoes are absolutely cut to pieces in a short walk; and then woe to the walker if he has not arrived at more merciful ground. Several years ago a band of horse-thieves, led by a desperado known as Charlie Ross, was fleeing from Gallup with several stolen animals. The officers were close at their heels, and to be overtaken meant a swift bullet or a long rope. The "rustlers" missed the

trail, but tried to cross a narrow part of the flow. It was a cruel and indescribable passage. They got across and escaped—for the pursuers were not so foolhardy as to enter the lava—but on foot. Their horses, including a four-hundred-dollar thoroughbred, were no longer able to stand. The desperate riders had spurred them over that cruel surface until their hoofs were absolutely gone, and the poor brutes had no feet at all! The robbers themselves came out barefoot, and the rocks were marked with their blood. I am glad to remember that the pursuers soon got around the *mal pais,* and put the horses out of their misery.

This flow runs for several miles besides the track of the Santa Fé Railway, just west of McCarty, and comes to an abrupt end in a pretty little meadow there. The small bluish San José Creek rises in a cold spring which pours forth from a cave in the lava, very much like the beautiful spring at Agua Fria. The creek evidently belonged in the valley before the lava came, and despite that fearful invasion of fire it still holds its own. For miles it runs through the great black river of stone, now in winding channels, and again heard but unseen in long caves under the lava. There are also in this part of the flow a dozen or more nearly circular basins, some filled with water from the brook, and a favorite breeding-place for wild ducks. It is a very unsatisfac-

tory place to hunt, however, for your duck is very liable to fall into one of the deep, narrow cracks in the lava, where he is lost forever.

The wildest and most interesting part of this stone river is up near its head. Everywhere it keeps its old waves and its very eddies, frozen into enduring rock; everywhere it has its upheavals and its dangerous fissures. But near the crater its surface is inconceivably wild and broken. It seems to have gouged out a tremendous channel for itself in its first mad rush. For a mile the flow is a succession of "slumps." The solid rock beneath seems to have dropped out of sight, and when the fiery river cooled it dropped too, but only in places. I suppose that really the molten lava all ran out from that part of the conduit, and that finally the shell broke down in spots. But what a conduit it must have been!

Areas of five acres of this hardest rock, twenty feet thick, have simply dropped down and lie at the bottom of a savage well seventy-five feet deep! There are a dozen or more of these wild "sink-holes," varying from half an acre in area to more than ten times as much; and they are the most forbidding, desolate, chaotic wrecks imaginable. Most of them are inaccessible, for their rock walls are sheer; but I have clambered down into some of them, and in every one which could be entered have found the dens of bears and other wild

beasts. They are safe enough there from molestation even by the ubiquitous cowboy, who has to ride everywhere else in search of stray cattle.

In one of these sinks I made a curious discovery in the autumn of 1891. Perpetual snow is supposed not to exist in the Southwest. We have several peaks over twelve thousand feet high, but that is not a sufficient altitude for eternal snow in this arid climate. The spring sun makes short work of the drifts, even at the greatest elevations. But here I found perpetual snow at an altitude of eight thousand feet, in the strangest refrigerator nature ever built.

It was in the largest of these sinks near the Agua Fria crater—a gruesome pit into which I descended with some misgivings, in quest of bear, and in company with the Ute cowboy. After exploring the various caves in vain, finding plenty of traces of bear but no bear, we went clambering over the chaos of lava blocks to a great, dark cavity at the head of the sink. Here the broken conduit showed plainly. It is a huge tunnel, with an arch of nearly fifty feet, and running back under the lava no one knows how far. In the mouth of the tunnel, fully one hundred feet below the surface of the flow, is a clear, cold pool of water, walled behind by a bank of snow twenty feet in visible thickness. It is flat as a floor on top, and sheer as a wall in front, and runs back

nearly a hundred feet. The successive deposit are clearly marked. In the severe winter of those mountains a great deal of snow drifts into the tunnel. In summer this settles and hardens, and volcanic ashes blow in and form a thin layer upon it. The sun never enters beyond a point about ten feet back of a perpendicular from the top of the cliff, and as the cliff forms a sort of bay, this mass of snow is touched by the sun in a semi-circle, and melts so that its face is in the shape of a crescent. This perpendicular wall of snow twenty feet high is very pretty, for, with its bluish strata interlined with the yellow horizontal bands of dust, it looks for all the world like a huge section of Mexican onyx. It is settled and solidified until it is half ice; but the hottest summer makes no further impression upon it. A strange place for eternal snow, truly; a novel idea in ice-houses—this refrigerator in what was once the hottest place in the world! The contrast is noticeable enough even now. In summer the sun beats down into the pit with great fury, and the black rocks absorb its heat until the hand can not be laid upon them. But the instant one steps into the shade of the great arch there is a tremendous change in temperature. From being nearly broiled one passes in two steps to a chill which cannot long be borne. Up under the gloomy rock-arch twittering swallows have their nests,

and all the hot day they skim about in the mouth of the tunnel, now in sun and now in shade.

Such volcanic ice-houses are sometimes useful, too. The city of Catania in Sicily is supplied with ice from a somewhat similar cavern in one of the lava-flows of Ætna. But I do not know how the ice-cave of the Zuñi Mountains can ever be made available, unless, indeed, the resident bears and wildcats should take a notion to drag in a calf or deer and keep it in this unique cold-storage warehouse against a possible famine.

Not only are there these stone rivers in so many of the valleys, but thousands of the great sandstone mesas (table-lands) of New Mexico and Arizona are capped with flat lava-flows from ten to fifty feet thick. In some places there are solitary buttes, one or two hundred feet high, standing alone in a plain. Their tops are solid lava, but there is not another sign of a flow for miles around. Those flows were extremely ancient, and erosion has cut down all the rest of the lava-covered upland and carried it away in sand, leaving only this one strange "island" in token of what once was. Very frequently, too, in such a mesa the underlying sandstone is so much softer that it has been worn away first, and the harder cap of lava projects everywhere like a great, rough cornice.

Talking about craters, the strangest in all the

Southwest is not the mouth of a volcano at all, but as it were the cicatrice upon Earth's bosom of a bullet wound from Space. I know nothing like it anywhere else. It is unique—mysterious—baffling.

About ten miles southwest from the little station where the Santa Fé crosses Cañon Diablo on a bridge 520 feet long and 218 feet above the dried bed of this sudden rift in the plain—with an effect, when seen from the side, of a giant daddy-long-legs stepping across a rut—is a rounded hill about two hundred feet in height. Coming to the top, you are startled to find a bowl-like crater, inevitably suggesting a volcano, but with no igneous scars nor crags. It is nearly a mile in diameter and about six hundred feet deep.

This has become famous throughout the scientific world as a place of meteorites. Hundreds of these strange celestial missiles have been picked up here, from tiny nuggets up to a thousand pounds. These are non-magnetic; but there is a great quantity of scales of iron, not only highly magnetic but of strong polarity, which are judged to have scaled off from the meteorites in their fall. Strangest of all, the scientists have found in these lumps of stellar metal the three forms of carbon—diamonds (transparent and black), graphite, and amorphous carbon.

Every indication proves that a meteorite of

stupendous size, coming with a velocity inconceivable in the projectiles from our greatest cannon, and hurled from interstellar spaces, smote this high dry plateau, shattering and crumbling the hundreds of feet of sandstones of the top, and pulverizing the limestones below till they splashed up in a vast cloud of powder and formed this huge circular scar about the wound. Nowhere else in all that region are these strange white sands.

Mining companies have been formed to dig for the great mass of meteoric iron supposed to lie far below the bottom of this crater. Eminent scientists have conducted crucial tests with delicate instruments to locate it; but there has been no magnetic response—and it will be remembered that the meteorites found in this locality are non-magnetic.

Meteorite Mountain is still a riddle. Beyond peradventure, it is neither a "sink," nor a result of erosion, nor a volcanic outlet. The meteorite theory is the only one which has ever been found to explain it; and that of course will never be fully proved until we shall dig deep enough to find the vast projectile which could inflict so terrible a wound.

CHAPTER XVIII

THE FIRST AMERICANS

A Word About the Aborigines of This Continent —Their Humanity—How We Have Treated Them

MANY brutal and many foolish things have been said by man; but probably the most idiotic as well as the most brutal of all the sayings that have passed into proverb is, "The only good Indian is a dead Indian." I do not believe these words were ever used by the man to whom they are accredited; but they have found too wide an echo among the ignorant and unthinking, and have too much colored our general attitude toward a people for whom in God's truth we have every reason to feel gratitude, respect, and brotherliness. It would be just as rational to say "the only good Yankee is a dead Yankee," or "the only good Frenchman is a dead Frenchman." You cannot, as Burke said, "indict a nation." Race hatreds are the most ignorant and the most harmful of all human passions.

The American Indian can afford comparison

with any other people on the face of the earth, by any standards approved by the long wisdom of mankind. We have his record for four hundred years; and beside it the records of a dozen European peoples in contact and competition with him. Our own nation has been most unfortunate in its dealings with the people it found in possession of the rich country we now occupy. Beginning with the Pilgrim fathers, of whom the old witticism (was it Oliver Wendell Holmes?) still holds good that, "landing, they first fell on their knees, and then on the aborigines." In the whole acquisition of the East by our people from its original owners, William Penn's is the only case where there was even a pretext of reasonable purchase; and of course a cynic would draw a very biting picture of the price William Penn paid for what he got.

But I know no other case in history where the intrusion and aggression of an alien race met such patient return. The white men pushed on; the brown men fell back. Let me pause long enough to take the scalp off the ridiculous misnomer "red man," or "redskin." No Indian in America was ever red—except when he painted up with vermillion for wooing or the war-path. The Indian is brown. He sometimes calls *us* red—with much better reason, for a normal face of ours should have that color. But this childish

title, typical of the ignorance and carelessness prevalent concerning the First Americans, has become so common that even intelligent people often use it without thinking.

Broadly speaking, the American Indian had all our virtues, and only a part of our vices. In any community of his, honesty, chastity, conjugal faithfulness, filial respect, and parental love ranked higher than in any community of ours. There was no child murder, no defalcation, no swindling, no crooked politics, no hold-ups, no petty larceny, no burglary, no murder, no suicide, no desertion—virtually no infraction of the fundamental human laws which, though unwritten, were known by heart to every one of them. We seem to have a smug impression that We—or Civilization—"invented Human Nature!" As a matter of Science, there is not a single cardinal virtue that was not invented by primitive man; nor have there been "improvements" on his patents since the Carpenter framed in undying form the tenets of mankind since the Flood.

The vast reaches of the West, occupied by scores of tribes, some of them frequently at war with one another, were safe to white men until they wantonly made this peace impossible. You will remember that Lewis and Clark in 1804 traveled clear to the Pacific among these wild tribes

Photo by Chas. F. Lummis

A PUEBLO DARBY AND JOAN
In their National Dress

without trouble, and that sculpture has immortalized the noble Indian woman Sacajaweah, their friend and guide. The great caravans of the Santa Fé Trail ran from Missouri to the ancient City of the Holy Faith in New Mexico (then part of the Mexican Republic) for many years unmolested. But these were real men who made these journeys—seasoned, self-controlled, brave frontiersmen. It was when the romance of the Santa Fé Trail began to be noised about in the East that young bloods were attracted to the adventure—men without the training of the Wilderness. And when they saw their first Indians, they took a shot at them as they would at jack-rabbits. And when some of the horses disappeared, a party would go out and kill off the people of the first Indian village they came to, as "punishment." For that matter, this sort of reprisal did not end with the Santa Fé Trail; in the gold days of California posses similarly went out and massacred villages because of acts attributed to unknown Indians.

Naturally it did not take many years of this sort of thing to establish "reciprocity." The Indians began to attack wagon-trains, and to kill the people; and we had long and bloody Indian wars throughout the West and Southwest, with a gallant little army bearing the brunt. But it is not of record in the history of the United States

that a single Indian war was begun by Indian aggression. They fought only upon provocation which would have set any of us off much sooner.

If I had my way it should be compulsory in our high schools and women's clubs to read the official story of our dealings with the Indians—such books as Helen Hunt Jackson's "A Century of Dishonor," based on the official reports of the War Department and the Department of the Interior; John P. Dunn's "Massacres of the Mountains, a History of the Indian Wars of the Far West"; and the grim story of the massacre of Wounded Knee by James Mooney in the Fourteenth Annual Report of the Bureau of Ethnology. It was not in the old days of "border ruffians," but December 28, 1890, when Sitting Bull and other medicine-men had stirred up the Sioux with their "ghost dance," and about three hundred Indians had come in to the Pine Ridge Agency by command of the Government, and pitched their lodges, with their families. An attempt to disarm the men led one rebellious Indian to shoot a soldier; and the troops at once opened fire on the village, with their rifles and Hotchkiss guns. In the "battle" which followed, thirty-one soldiers were killed, and about one hundred Indian warriors, and 120 Indian women and children—many of the latter being shot down in their flight as far as two miles away. An interesting little

girl came to my home years ago with her adopted American mother, Mrs. Colby, the wife of General Colby. Zitkala-Noni, "Little Lost Bird," the Indians had named her. She was three or four months old at the massacre of Wounded Knee. Four days later, after a Nebraska blizzard had frozen everything, including the bodies of the unattended Indian wounded and dead, searchers found this little one warmly wrapped in the clothing and by the side of her dead and frozen mother. Few white children would have lived through that frightful exposure; but this hardly little Sioux baby not only survived but grew up. Indeed not long ago she visited me again, a fine-looking talented, buxom young woman.

It is also a matter of record that in the more than one hundred years that our Government has had official dealings with many tribes of Indians, and has made innumerable treaties with them, no Indian tribe has ever violated its compact with the Government—and you might almost say that our Government has never kept a treaty with the Indians. It has broken them unnumbered times. It is not a pretty picture for the patriotic American to look at—but it is a wholesome one. It is only as we realize what cowardly injustice we have dealt out to the First Americans, only as we learn by undisputable proof that they have never been the aggressors in our "Indian troubles," but

that their hospitality, humanity, patience and long-suffering have put us under a heavy debt of gratitude to them on behalf of our own pioneers, that we can get a truly American feeling. Indians are not perfect, nor ideal super-men. There have been bad Indians, treacherous Indians, foolish Indians, bloodthirsty Indians. But no Indian tribe was ever any one of these things; and the proudest American community was never ruled by officials more absolutely honest, honorable, and high-minded. And I would like to bear this fact in on my countrymen. These are not sentimentalities nor idealisms nor heroics. The American Indian is a fine, unspoiled human being, from whom we have much to learn—and to whom, at last, we should give what is due to all men, fair play. What I have said is not my opinion merely, though I have earned the right to an opinion by careful contact-study for more than half a busy life. It is corroborated by all who have really known the Indian, and by the official records of our own Government, overwhelmingly and beyond controversy.

There have been several typical cases in the Southwest where our habitual official mistreatment of the First Americans has been brought up with a short turn, and single injustices have been redeemed. Over twenty years ago the unimpeachable Supreme Court of the United States

© by Chas. F. Lummis

"THE MAN WITH THE HOE"—
But no "Brother to the Ox"
Faustín, War Captain of Acoma

evicted the three hundred Indians of Warner's ranch, in Southern California, from their immemorial home. They were not properly represented, and that august tribunal failed to be shown that under the Spanish law (from which all titles in California derived) it is not, and never has been, possible anywhere in Spanish America, to evict an American Indian from the lands upon which he was born. But there is no going back of the Supreme Court, even when its high wisdom fails for once; and these people were set afoot in the desert. I founded the Sequoya League in Southern California to remedy this tragic injustice. The Interior Department sent out a veteran inspector, who examined several ranches offered for sale, and finally recommended the purchase of the Monserrat Ranch of two thousand acres for $70,000. A storm of protest went up from Southern California; but the Department insisted that this was a proper home for the evicted Indians, and this a proper price—even after we proved by the records of San Diego County that the Monserrat Ranch had been sold three times in ten years for $30,000.

Then President Roosevelt came to the rescue, and appointed a Warner's Ranch Indian Commission, serving without pay; Russel B. Allen, Charles R. Partridge, and Charles F. Lummis, the last as chairman. On the third day after telegraphic notification of appointment we were

in the field, outfitted for a two months' exploration, with stage, chuck-wagon, cook, and supplies; a secretary, and the veterans Judge Egan and Colonel Collier as experts respectively on land-and-water and titles.

We advertised widely for properties, with the warning that any attempt to "hold up" the Government would *ipso facto* bar the property from consideration—and we did bar three owners who asked double price. We traveled over 1200 miles, examined 107 ranches critically, made engineer's measurements of every flowing stream, and finally recommended the purchase of the Pala valley, 3500 acres for $35,000. It had eight times as large a water supply as the old home, one hundred times as much irrigable land, abundant timber, and other desirable features. The only way we could make an "engineer's measurement" of the only stream on the Monserrat was with a three-quart canteen at a point where the stream fell over a little clay bank. It filled the canteen in twenty seconds by the stop-watch! Even then, there was an attempt of Red Tape to put the Monserrat ranch through, after all; but Roosevelt put down his forceful thumb; the Secretary of the Interior took the first train from his Vermont vacation, and the Commissioner of Indian Affairs the first train from Washington; and the day after Mr. Roosevelt had received our telegram as to

the proposed deal they met in Boston and approved the Warner's ranch report in half an hour.

This is said to be the only case in American history where Indians were removed from their own home to a far better one.

Nearly all the little bands of "Mission Indians" in Southern California are now living on the rim of the desert, just off the edge of the fertile valleys from which we have driven them. A few years ago the Sequoya League roused the public, and for two years we fed the starving Indians of the Campo reservations, supplied them with food and bedding and seeds—until we could shame the Government into caring for them properly. Later, we procured the appointment of a competent "agent for all California Indians," and several appropriations, with which were purchased little patches of fertile land to be added to the desert reservation.

During Mr. Roosevelt's Presidency, also, he helped us stop another abuse—the infamous "Hair-cut Order." To a certain class of philanthropists and reformers, if you can take an Indian to the barber and tailor and make a caricature of a white man out of him, you have solved the problem and he will be "civilized." With the Indians, the hair is as large a part of religion and of pride as it used to be with American women; and when a brutal Indian agent on an

Arizona reservation, to carry out this hair-cut order, caught male Indians by force, bound them with baling wire, and hacked off their flowing and carefully tended hair with a pair of sheep-shears, there was a roar of indignation throughout the Southwest. It was not long before this idiotic and brutal government regulation was sent to the discard in dishonor.

A great many people in this self-conscious age talk as familiarly of the Brotherhood of Man as maids of thirteen do of puppy-dogs—and with less affection and intention. As a stalking-horse for meddlers and reformers, as a sob-sentimentality, the term is an offense. But it is the great, beautiful underlying fact of this our habitable world. It is the supreme lesson which crowns years of arduous research by the scientist who gives his life to anthropology, ethnology, archæology—fearsome Greek words *our* Medicine-men have set up to scare us off from the most beautiful, the most fascinating, the most romantic, and the most broadening study in the world—the Story of Man. And you can tell just how much of a scientist a man is who claims that title, precisely by his attitude toward the literal brotherhood of man. He may have traveled far, and made wonderful collections, and studied strange tribes, and deciphered a mile of hieroglyphics; but if he does not know by this time that God did not make

Photo by Jackson

A PUEBLO PATRIARCH AND THE OLD CARRETA

savages out of one kind of clay, and Englishmen and Americans out of another (and with a good deal of trouble, at that, to find clay good enough for the latter), why, the gentleman may be a scholar, but he is not a scientist. For science is knowing. It is common sense plus unending labor to learn.

He is ignorant of the very a-b-c of the science of man—which is that the human raw material is the same thing the world over; that the differences between a Hottentot and a college professor are only as skin-deep as their relative beauty; that environment, climate, geography, contact with other peoples, the acquisition of useful articles, and inventions following their use, have much changed us outwardly, and developed us in some ways mentally, but not made us a new race. We have not invented any new virtues. Mother-love is as strong (and more universal) among the most primitive tribes as among us. So are honesty and loyalty and friendship and neighborliness and public spirit. We did not invent Art: among primitive men every one was an artist; some better than others, but all with the impulse and the ability to express love of beauty by visible form. An Indian would laugh at us for paying five thousand dollars to some man to paint a picture for us. The Indian would paint his picture himself, realizing that it was not a masterpiece,

perhaps, but relieving his art instinct. As to paying five dollars a seat to have some one sing for him—confessedly far better than he could sing himself—that would seem to him the height of folly. And he is partly right. For he sings, himself, personally, expressing, sustaining, amplifying, glorifying an emotion, as song was meant to. He likes to hear others sing; but has not lost (as we are losing) the joy of "sing yourself"—sing at your work, sing as you play, sing around the fireside or out under the friendly stars. I can remember when New England women sang about the house, and every Yankee boy whistled. But nowadays I rarely hear a whistle at all—unless a program by my little friend Margaret McKee who stirs my mocking-birds to a wild, vain rivalry—and thrills great audiences, here and abroad.

Being a true artist, the Indian would enjoy the dancing of our Maude Allan or Pavlova; but he gets much more satisfaction out of a dance of his own—as rhythmic and as rapt. He never dances "for fun" as we do, but he enjoys his dance as keenly as our wildest devotee; and our American girls who can "dance all night" would probably change their tune if they had to follow the emphatic steps of any of the great ceremonial dances of the First Americans.

As to paying fifty dollars or a hundred dollars for a ring-side seat to watch two muscular gen-

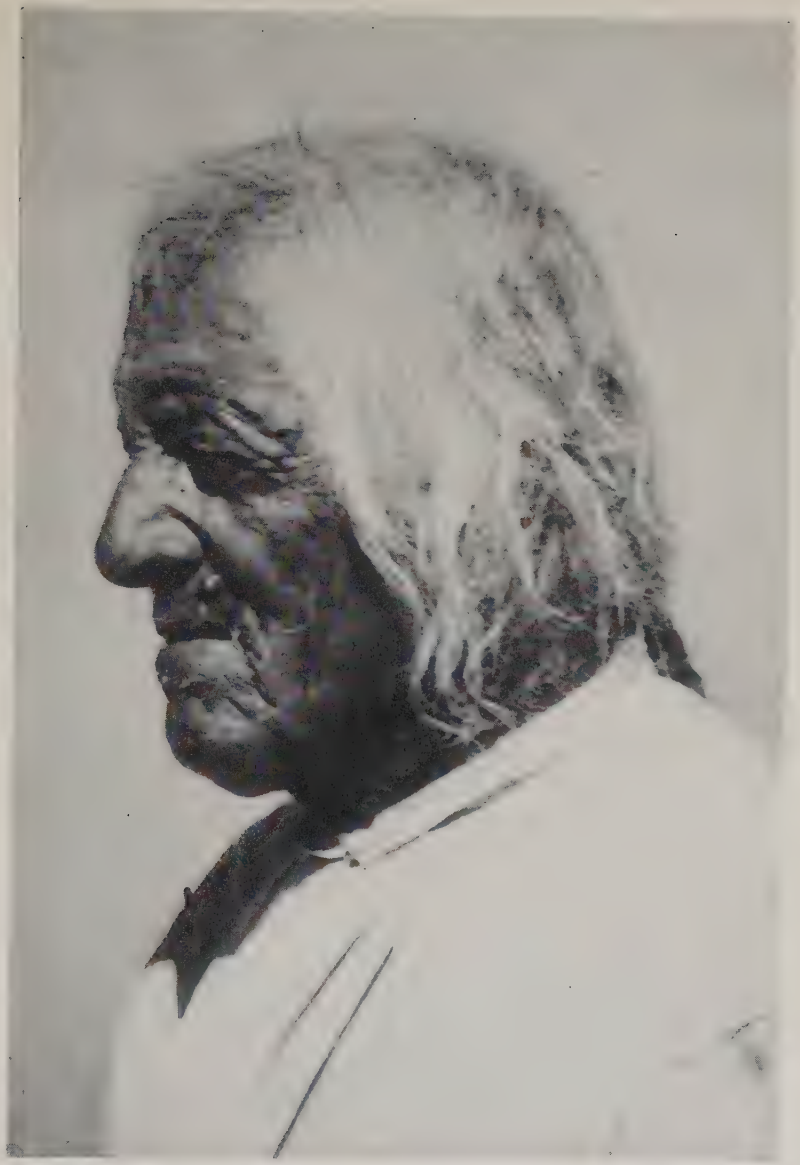
tlemen "pound-one-another-the-face-off," they would laugh at the idea, or at the modern wrestling-match with an hour or so of titanic tussling to get the second shoulder to the mat. They love real horse-races with real riders, and frequently gamble heavily thereon; whereas a trotting-race would seem to them a foolish misuse of the horse.

In a word, the Indian wishes to take his pleasures direct and personally, and not by the medium of talented hirelings—to sing, to run, to dance, to make beautiful things instead of buying them. He approves of vicarious atonement only in his sorrows. He pays the tribal penitent to make long fasts, to stick thorns in his flesh, to mortify his body—all for the collective sins of the community. Which seems not so benighted, perhaps—to make your own pleasure, and hire some one to do your sorrowing. It is one of the penalties of our civilization—our huddling together in vast aggregations, where the individual no longer has all sorts of things to do for himself—that we lose individuality, independence, initiative, and many of the human qualities which are the universal birthright of man.

I often heard our Elder Statesmen and orators —Wendell Phillips, William Lloyd Garrison, Phillips Brooks, Henry Ward Beecher, Conkling, Ingersoll, Ingalls, and a long list. I have often

listened to the Senate of the United States. But I have never heard truer eloquence, deeper, more sincere, genuine, impressive, than I have heard among the First Americans—particularly in Juntas of the Principales in Pueblo towns. The "Pueblo Ben Franklin," whose picture I show, could have held his own with any of these greatest of our Old Men Eloquent; and he had a voice beside which that of any one of them would have sounded almost boyish. His head is obviously of the Ben Franklin type; but it is a stronger, deeper, better poised head, without any of the inevitable smugness of the great inventor of cook-stoves, and kite-flier to the lightning.

What is more, I have never sat more breathless before any orator, nor been more impressed with the majesty, beauty, grace, and logic of his address, than I have been spellbound for hours by orators who did not utter a sound! I have seen, of course, innumerable deaf-mutes in conversation; but this nervous, semi-hysterical, rapid-fire gesturing could never be dignified or impressive. The Abbé de l' Epée in 1759 made the invention which has been almost a new life to innumerable unfortunates; but the deaf-mute language, even to-day, is a childish, clumsy, halting, and circumscribed medium. If the good abbé had only known where to come for an incomparably better, cleverer, easier, more logical, and more useful



© by Chas. F. Lummis

"VIEJO CHÁVES," A PUEBLO BEN FRANKLIN
One of the Elder Statesmen of Isleta

"language" for his speechless and earless friends! For the First Americans were a thousand years ahead of him in time and a thousandfold in efficiency. It is a very fair index of the quality of the aboriginal mind.

In the ancient days the Great Plains, and all that is now western United States, were the home of between forty and fifty different tribes of First Americans, speaking as many totally distinct languages. In their nomad life, hunting, warring, trading, they had constant need of some means of intercourse. If they had been foolish civilized people they might have tried to invent some Esperanto or Volupuk, or other impossible medium—impossible, because it has to be *learned,* and never will be learned by enough people to be efficient. But, being plain, unobfuscated humans, whetted by their active life, they "just naturally found" a universal language, without consulting one another or having Intertribal Congresses. A language which is possible, because it does not have to be learned—in a certain sense; not even arbitrary, but obvious and natural. The deaf-mute speaks in words; therefore, the other man must understand his language. An Englishman cannot talk to an Italian on his fingers. But the Indian talks, with his hands, not *Words,* but *Ideas.*

With one hand, or with both, any man of any

one of these forty tribes could (and can) converse with any man of any other. I mean converse—tell a story, ask a whole cross-examination, make an oration. He does not have to know how to spell, as the deaf-mute does, nor to know a word of the other man's language.

Of course signs and gestures came before speech the world over; and everywhere people still use something of that old "alphabet"—primitive peoples a great deal, but our own school children at least 150 signs, as is recorded by that true naturalist, Ernest Thompson Seton, whose book "Sign Talk," with seven hundred of his clever illustrations showing the gestures, is probably the most useful book on this very interesting topic. He was assisted by the veteran expert, General Hugh L. Scott, U.S.A. The standard book is "The Indian Sign Language," by Captain William Philo Clark, 1889.

But, while Sign Talk is of all parts of the world, there is no question that the American Indian has brought it to its highest stage of perfection. Seton earnestly urges its cultivation, even by people who are not driven to it by misfortune. It is a universal language—that is, equally adaptable to all languages and peoples. About one hundred thousand people to-day talk the deaf-mute language; as many talk the incomparably more useful Indian Sign Talk.

Where did they Come from—these First Americans, these prehistoric Autocthones of the soil we have mostly stolen from under them?

They came from—Here! No fable dies harder than the Protean myth that the American Indian derives from the orthodox "Cradle of Mankind." One of the most magnificent and expensive books ever published was Lord Kingsborough's "Mexican Antiquities," in four elephant folios—purely to prove that our American Indians were the "Lost Ten Tribes of Israel." It cost so much that its author died in a debtor's prison in Dublin in 1837, and its thesis is a childish vagary, though the work is of great value because of its reproduction of ancient Mexican manuscripts and codices otherwise unobtainable. But this theory was already centuries old. Father Nicolás Duran in 1585 was one of the first to state explicitly that "these natives are of the ten tribes of Israel that Shalmaneser, King of the Assyrians, made prisoners and carried to Assyria." This captivity was in 721 B.C. During the sixteenth, seventeenth, and eighteenth centuries there were several books to prove this same fallacy—like Adair's "History of the American Indians," 1775; Dr. Elias Boudinot's "A Star in the West; or, A Humble Attempt to Discover the Long Lost Ten Tribes of Israel, Preparatory to Their Return to Their Beloved City, Jerusalem," 1816. Our own Ben Franklin

mentions this theory in his writings without disapproval.

Still commoner are authors and travelers who find our Indians "unmistakably Chinese," or "evidently Malayan." And there are abundant theories as to how they came to this hemisphere across impassable seas from the other side of the earth—by sunken continents, by Bering Strait, by Chinese junks—considerately, not yet by aëroplane! All this radicates, of course, in literal acceptance of the Adamic Creation—the genesis of Man and every other form of animal and plant life in one sole spot at one sole time. No wonder we had to have Donnelly's brilliant but apochryphal "Atlantis"—for the Incas and Aztecs and Pueblos (not to mention the Imperial Elephant and the Saber Tooth Tiger which once roamed Southern California, and many left their bones in the great death-trap of La Brea), to cross over by! And to my mind comes also a moving picture of the Atlantis immigrants toiling along their doomed continent to people and plant the Hemisphere that God had Forgotten; each solemnly clasping his flowerpot wherewith to forest a blank New World! Or, mebbe the seeds of the Garden were brought over here by birds? They must have been *gulls!* About half the flora and fauna of the Americas is exclusive. Where did the rattlesnake, the humming-bird, the redwood "come from"? They are nowhere else.

Musico, Queres Silversmith

Photos by Chas. F. Lummis

Diego, Tigua Youth

The Pueblo Waterworks. All water is brought thus

Romance is fine in a novel, but out of place in history and science. The best scientific doctrine to-day is that of "Equivalent Development." It would not deny the All-Wise and Almighty the power and the imagination to create more than one Garden of Eden and one Adam and Eve. Human and animal and plant life were spontaneous in many different quarters of the globe. There were Gardens of Eden in at least South, Central, and North America. In the Trossachs of Scotland you catch a spotted brook-trout; in the brooks of Maine you catch the same fish. It is hardly necessary to insist that the Scotch trout swam the Atlantic, his bride under his fin, to populate the head-waters of the Penobscot! And however did he get in the first place to Scotland from Asia Minor—where there never was a trout? The same conditions—of God or Nature—that would produce a brook-trout in one place would produce him in another. And so of man. The ancient races of the New World had their measurable migrations, even as did those of the Old, though not so far. But, broadly speaking, these wonderful old "civilizations" of primitive America, whose monuments so astonish us in Peru and Guatemala and Mexico and our Southwest—those cultures originated about where their bones bleach to-day. They were all Native Races, and not migrants from the Antipodes. And they have been here since as long ago as Babylon—perhaps

far longer. They are in very truth American.

Sorry be it said, the Pueblos—finest of First Americans, a precious national asset in art, ritual, and social values—to-day (1925) feel themselves in deadlier jeopardy than ever before. In their centuries under Spain and Mexico, and the first half-century under "American" rule, they were never in danger of losing lands or religious liberty. More than one hundred years before our nation began, Spain made formal grants of abundant lands to each Pueblo. Mexico, splitting from Spain over a century ago, confirmed these royal patents. Our Congress confirmed them when we took New Mexico. Here and there a neighborly Mexican "squattered" on Pueblo lands; but there were no fights—nor plan to rob. Lands in New Mexico had no market standing. But now, they have—above all, the Superior Race smells possible Oil!

The incredible "Bursum Bill" (fathered by a cabinet officer to whom the Teapot Dome scandal played Judgment Day) was juggled through an innocent U. S. Senate—which actually recalled and abrogated its own act when timely light brought a storm of public indignation. Its hardly disguised intent was to break open the Pueblo land-grants to loot. A later measure, now law, gives the Pueblos two years to prove before

Photo by Chas. F. Lummis

THREE YOUNG ISLETEÑOS IN 1890

The front one, Pablo Abeita, is now the most prominent Pueblo Indian in New Mexico

a special court that they are entitled to their own lands. Failing such proof, within that exact calendar, they are forever estopped from coming into court. They have the titles, but the squatter has the land. The Government provided no funds and no lawyers for these its wards. Their average annual income per capita is about $28!

But this is not the worst. Frontal attacks to grab the Pueblo lands find a barrier in public opinion. So a more insidious flanking. Among these people, the Community, with its council of wise old men and its immemorial laws, stands *in loco parentis.* The Pueblos have a ritual religion as profound, as noble, as beautiful—and perhaps as old—as the Hebrews. They have lived by it for millenniums—and living by it they are better citizens, parents, children, and neighbors than we can show. If this ancient faith can be broken up, the Community will fall apart—and the individual will fall a prey to his smarter neighbors. That is precisely the present attack. The venerable Pueblo ceremonials are to be broken up. They are "Pagan!" So was Homer—and Socrates. Nor was Moses exactly Christian!

CHAPTER XIX

HOMES THAT WERE FORTS

The First American Sky-scrapers—Prehistoric Castles of the Cliff-dweller Pueblos—Great Community Houses Still Inhabited

THE idea of an Indian dwelling in a house at all seems strange to those of us who know little of our own country. "Indian"—why a nomad, living in his wigwam of bark, or his lodge of buffalo hide, briefly, and then "striking" his village and moving off somewhere else. Or, perhaps, a poor outcast clinging to the outskirts of civilization. The average reader looks dumbfounded when he is told that many of the First Americans built and inhabited many-storied buildings a thousand years ago. There are recently civilized tribes in the West who have learned from us within late years to dwell in regulation American dwellings; but these are parvenus among the First Americans. The Eastern and the Plains Indians were nomads, dwelling in wigwams and tepees; and most of the tribes of the Southwest are also nomad. But there is one great

people in North America above Mexico which has lived in permanent and excellent houses since before history began—and that is one of our very largest tribes, the Pueblos. While Columbus was still trying to beat a New World into the thick skull of the Old, these quiet, unlettered "village Indians" were already living in their strange lofty tenements—and no man knows for how long before. It took a great many generations before our forefathers attained to any buildings of more than fifty rooms and three stories on this continent; but uncounted centuries before the landing of the Pilgrims—or even of the Spaniards, who were more than a hundred years ahead of them—the Original Americans of the Southwest built and occupied tremendous community houses, from four to seven stories in height, and some of them with a thousand rooms. Pecos, in northern New Mexico, had one house of 517 rooms, and another of 585. The influence of civilization has in the last centuries largely affected Pueblo architecture; and most of the Indian towns along the Rio Grande nowadays have but one- and two-storied dwellings, more after the Spanish style. but there are hundreds of ruins of these enormous "community-houses" scattered over Arizona and New Mexico, and some in Colorado and Utah, and some still occupied towns of the same sort. The most striking example among living towns is the

pueblo of Taos, in the extreme northern part of New Mexico. That wonderfully picturesque town (looking at which the traveler finds it hard to realize that he is still in America) has but two houses; but they are five and seven stories high, and contain about three hundred rooms apiece. It has attracted a notable resident colony of American artists. The pueblo of Acoma, in a western county, has six houses, each three stories tall; and Zuñi, still farther west, has a six-story community-house covering many acres and containing many hundred rooms. The Moqui towns are three-storied. As for ruins of such buildings, they are everywhere. Some years ago I found in a remote and then dangerous corner of the Navajo country such a ruin—the type of a thousand others—in which the five-story community-house formed an entire rectangle, inclosing a public square in the middle. The outer walls of those houses never had doors or windows, and so they presented to any marauding foe a blank wall of great height. On one side of this ruin is its most uncommon feature—a great tower, with part of the fifth story still standing, and still showing the loopholes by which the beleaguered Pueblos showered agate-tipped arrows upon their besiegers. This pueblo was a deserted and forgotten ruin when the first Spaniards entered this territory in 1540.

Photos by Jesse L. Nusbaum, in charge

NORTH AND SOUTH PLAZAS OF "BALCONY HOUSE"

After excavation by School of American Research

All these great houses were of stone masonry very well laid. The builders had no metal of any sort and therefore could not dress stone, as many superficial observers have supposed they did, but selected sandstones and limestones which broke naturally into rather regular shape, and laid these in mud mortar with remarkable skill. Down the uncrumbled masonry of those prehistoric walls one can slide the point of a spade as down a dressed plank. They sometimes rubbed the sandstone to face an outer edge.

The typical architecture of the Pueblos is unique and characteristic, and their original houses look unlike anything else in the world. They are all terraced, so that the front of a building seems like a gigantic flight of steps. The second story stands well back on the roof of the first, which thus gives it a sort of broad, uncovered porch its whole length. The third story is similarly placed upon the second, and so on up. There are no stairs inside even the largest of these buildings, but trap-doors and ladders to go down into any lower stories, built in the old fashion without doors. In Acoma, which has about seven hundred people, there were, when I first knew it, but six doors on the ground, and there are but few more now. To get into the first story of any of the hundreds of other tenements, one must go up a ladder to the first roof, enter the

second-story room, lift a wee trap-door in its floor, and back down another ladder to the first-floor room. All the "stairs" are outside the house, and can be moved from place to place,—a plan which has its advantages as well as its drawbacks—for they are all simply tall, clumsy ladders.

All these architectural peculiarities were for purposes of defense. The lower story was a dead wall, into which no enemy with only aboriginal weapons could break, and some of these walls have laughed at civilized field-pieces. The ladders could easily be drawn up, and the level roofs made an excellent position from which to rain stones and arrows upon a foe. Even if the enemy captured the first roof, the people had only to retire to the second, from which they could fight down with undiminished advantage. From these terraces the inhabitants could hold their own against a far superior force. Besides, the tenements were generally built around a square, so that their sheer back walls presented a cliff-like and unbroken obstacle which no savage foe could scale, while their terraced fronts faced upon the safe inner inclosure. At Pecos (now deserted), which was the largest pueblo in the Southwest, and at many smaller towns, an Indian could step from his door and walk around the whole town on any one of the tiers of roofs. Sometimes these

community-houses were terraced on both sides; and the two at Taos are like huge pyramids, terraced on all four sides.

These fine stone walls were generally plastered inside and out with adobe clay, which made them very smooth and neat, particularly when brilliantly whitewashed, according to the Pueblo custom, with gypsum. The rafters are the straight trunks of tapering pines stripped of their bark, and above these is a roof of cross-sticks, straw, and clay, which is perfectly water-tight. The windows are all small—another relic of the old days of danger—and in the more primitive houses are only translucent sheets of gypsum. Nearly every room has its queer Southwestern fireplace, in which the sticks are burned on end. Those for heating alone are very tiny, and stand in a corner; but the cooking fireplaces sometimes fill one side of a room, and under one of their capacious "hoods" half a dozen people could sit.

As you may imagine from what has been said of their houses, the Pueblos are peculiar and interesting Indians. They live neatly and comfortably, and their homes are generally clean as wax. They are peaceable and industrious, good hunters and brave warriors when need be, but quiet farmers by profession, as they were when the outside world first found them. They have always elected their own officials, and they obey the laws

both of their own strange government and of the United States in a way which they certainly did not learn from us, for there is no American community nearly so law-abiding. They are entirely self-supporting, and receive nothing from our Government. They are not poor nor lazy, and they do not impose servile tasks upon their wives. One of my Pueblo neighbors in Isleta lent our Government the hard cash to pay off our troops in New Mexico during the civil war! This was Ambrosio Abeita, whose picture I show, facing page 446.

Even more interesting and remarkable than the best types of present Pueblo communal houses are the ruins of their still more ancient homes. It was long supposed that the so-called "Cliff-builders" and "Cave-dwellers" were of an extinct race; and much more of silly and ignorant surmise than of common-sense truth has been written about them. But as soon as there was any really scientific investigation of the Southwest, like Bandelier's incomparable studies and the researches of Hodge and the New School, the fact was fully and finally established that the builders of these great ruins were nothing in the world but Pueblo Indians. They have not "vanished," but simply moved, for a variety of reasons; and their descendants are living to this day in later pueblos. Indeed, we now know the history of many of these

ruins; and the Indians themselves know that of all or nearly all.

The Pueblos used always to build in places which Nature herself had made secure, and generally upon the top of mesas, or "islands" of rock. Those who settled among the peculiar terraced cañons which abound in some parts of the Southwest usually built their towns upon the shelves of the cliff; while those whose region furnished precipices of easily carved stone hollowed out caves therein for their dwellings. It all depended on the locality and the surroundings.

A "banded" cañon of the "small-house Cliff-dwellers" is a wonderfully picturesque and interesting place. The stratification was a great help to the builders of these strange chasm-towns, and doubtless first suggested to them the idea of putting their houses there. The cliffs are much farther apart, in such a cañon, at their tops than at the bottom.

Sometimes there is a perennial stream at the bottom, but often, in this arid region, the dry season leaves only a chain of pools, which were, however, adequate for the water-supply of these communities. The several lower shelves of the gorge were never built upon, and the water was all carried several hundred feet up the cliff in earthen jars or tight-woven baskets on the heads of the

industrious housewives. Such inconvenience of the water-works has never deterred the Pueblos, and it is a striking commentary upon the savage dangers of their old life to see at what a fearful expense of toil they brought water, regardless of distance, to a place that was safe. At Acoma to this day every drop of drinking-water is carried in jars half a mile over an enormously difficult cliff trail, and in some of the old-time pueblos the daily water journey was even worse. They never brought water thus and filled tanks inside the town, as some have fancied, but stored it only in their earthen *tiñajas*.

But safety was before ease; and so the swarthy people built their homes far up the side of the cliff—and here was a great saving of labor in another way. As a rule the alternate strata in such cañons are of different kinds of rock, and unequally eroded. Between each pair of harder strata the softer intermediate one had been so gnawed out by wind and water that its neighbors above and below projected many feet beyond it, the lower one always farthest; so there the Cliff-dweller found that nature had made ready to his hand three of the six sides of every room. The smooth, solid rock of the shelf was his floor, and a narrow but endless porch outside as well. The overhanging rock of the ledge above was his roof—frequently a very low one, but certainly

water-tight—and the face of the intermediate stratum was his back wall. He had only to build three little stone walls from stone floor to stone roof—a front wall and two end walls—and there was his house.

Cliff-rooms of this class were extremely small, varying according to the strata, but seldom more than a dozen feet long, eight or ten feet deep, and five to eight feet high. In many of them no ordinary person could stand erect. There were seldom any windows; and the doors, which served also as chimneys, were very low and but twelve to eighteen inches wide. An enemy at the very door would be so crouched and cramped in entering that those within could take him at a disadvantage.

Think of a town whose sidewalks were three or four feet wide, and more than that number of hundred feet apart, and between them a gutter five hundred feet deep! Think of those fat, dimpled, naked brown babies, whose three-foot playground had no fence against a tumble of half a thousand feet!

There are several of these cañons of the small-house Cliff-dwellers easily accessible from Flagstaff, Arizona. They are gigantic gashes in the level, volcanic uplands; one comes to their very brink without the remotest suspicion that such an abyss is in front. One of these cañons is more

than twenty miles long, and in places six hundred feet deep. It contains the ruins of about a thousand of these small cliff-houses, some of which are very well preserved. These are the easiest to reach among the ruins of this class, being less than ten miles from the railroad station and hotels. There are hundreds of other cañons in Arizona, New Mexico, and the lower corners of Colorado and Utah presenting the same sort of cliff-houses; but most of them are in the wilderness, at great distances from the railroad or any other convenience of civilization.

In most of these houses there is little to be found. Furniture they never had, and most of the implements have been carried away by the removing inhabitants or by subsequent roving Indians. The floors are one and two feet deep with the dust of ages, mingled with nut-shells and thorns brought in by the rock-squirrels which are now the only tenants. Digging is made painful by a thousand thorn-stabs and by stifling clouds of that flour-like dust; but it is often rewarded. All about are strewn broken bits of prehistoric pottery, and the veriest mummies of corn-cobs, shrunken by centuries of that dry air to the size of a finger and hardened almost to flint. There are occasional squash-stems, as wizened and as indurated. By digging to the bed-rock floor I have found fine stone axes, beautiful agate arrow-

Photo by Chas. F. Lummis

IN CAÑON DE CHELLY

Note horseman at foot of cliff

Photo by Chas. F. Lummis

THE FAMOUS "WHITE HOUSE,"
CAÑON DE CHELLY

Swallow-nested in the great cliff

points, the puzzling discoidal stones, and even baskets of yucca fiber exactly like the strange "placques" made in Moqui to-day. The baskets crumbled to dust soon after they were exposed to the air. There are few other countries so dry that a basket of slender vegetable threads would hold its patterns for four hundred years or more under a foot of soil. But in Peru, where I unearthed more than five thousand mummies, the most delicate fabrics are preserved perfectly; for no moisture whatever penetrates to those ancient burials.

Between the small cliff-houses already described and the cave-dwellings there is a very curious link—houses, or even whole towns, built in a natural cave. "Montezuma's Castle" is such a one, and there are many, many others, of which probably the best known—thanks to Jackson's expedition—are the fine ruins on the Mancos. Most of the important ruins of the Cañon de Chelly[1] and its tributaries, Cañon del Muerto and Monument Cañon, are also of this class. These caves are not, like the Mammoth Cave, subterranean passages, but huge hollows, generally like a giant bowl set up on edge in the face of the cliff. They absolutely protect the inclosed town (which is frequently one building of enormous size), above, on both sides, and generally

[1] Pronounced Tsáy-ee or more often, Shay.

also below. They are usually high up from the bottom of the cliff; and between them and its foot is a precipitous ascent which no enemy could scale if any resistance whatever were made. Such towns could be captured only by surprise, as we know that in very rare cases some *were* captured. Some observant but uninformed travelers have been sadly misled by the regular, round hollows which are found in the ground near these lofty pueblos, and have taken them for water-tanks. Such a notion could arise only from entire ignorance both of the history and the ethnology of the Southwest. These circular cavities are the remains of the estufas or sacred rooms of the men, which were generally made underground. The roofs have long ago disappeared, and only these pits are left. They never had anything more to do with water than the fireplaces had; the Pueblo reservoirs were something entirely different.

Some of the largest and most notable ruins of the great communal houses of the prehistoric Pueblos are in the Chaco Cañon, sixty-five miles from the Santa Fé Railroad at Thoreau, New Mexico. In 1901 when I piloted President E. P. Ripley of the Santa Fé, Paul Morton, and a large party, to that place (which I first visited in 1888), excavations were being conducted under a morganatic alliance of Soap and Science—the Hyde Exploring Expedition (heir to the manufacturer

Photo by Chas. F. Lummis

PART OF NORTH WALL, PUEBLO BONITO

Outer Circumvallation of the Six-Story Communal House

of a famous detergent), which planned to corner the Navajo blanket market, and the American Museum of Natural History, New York. At the present time, more thorough excavation is being conducted there by the purely scientific School of American Research, of which I have the happiness to be a founder, and still a member of the managing committee. This portion of the Navajo country is extremely picturesque; and the ruins are of the greatest artistic interest to the visitor, and of very deep importance to science. Here the small, steel-sinewed, square-jawed, silent frontiersman Dick Wetherill had taken up a homestead, building his house beside the noble pile of the Pueblo Bonito ("pretty pueblo"). The Wetherills are among the staunch old-timers of that great wilderness; and Richard (who was murdered a few years ago) was the discoverer of the noblest and most monumental Cliff-dweller ruins known—the Cliff Palace of the Mesa Verde in Southwestern Colorado.

The Pueblo Bonito is semi-elliptical in form, its chord facing the east-and-west arroyo in the middle of the little valley, its arc toward, and but a few rods from, the hundred-foot cliff which bounds the valley on the north. The chord measures 667 feet; the distance north and south from it to the zenith of the arc is 315 feet; the total perimeter is about thirteen hundred feet. The

whole pueblo was in fact one huge building, in parts five stories high. By Wetherill's estimate it contained at least twelve hundred rooms—which would put it in the same category with ancient Pecos (Coronado's "Cicuye"), the largest prehistoric town in the United States. Nearest the cliff, the walls of Pueblo Bonito still stand in places forty-eight feet high—the great outside protective wall, without doors or windows. These walls are among the most perfect ever laid by primitive man in this country. As much as by the area, height, and plan of the noble ruin, the visitor is likely to be impressed by its magnificent masonry. One can hardly blame the "arm-chair explorer," first confronted with these beautiful walls, for declaring them to be of "cut stone." Of course there was never any cut stone masonry whatever in the ancient Southwest. The aborigines had no metals, and would not think of dressing rock with their tools of obsidian and agate.

Every type of masonry known to Pueblo architecture is found in this remarkable building, ranging from plain rubble to courses of ornamental mosaic. In some of the estufas we find admirable tablet masonry, alternating with bands of larger blocks. There is a bewildering number of these sacred chambers, which I prefer to call estufas,

as they have been called by everybody for three centuries; though the government bureaus prefer to call them *kivas,* as they have never been called anywhere except in the Moqui pueblos where the word is native. *Estufa* is Spanish for a stove; and in view of their generally circular form, and of the heat of them when they are filled with humanity, there is nothing far-fetched about the title. In any event, it is the historic word, universally understood among all the pueblos, and among students throughout the world; whereas kiva, a Moqui term, is not understood in any other pueblo—each of which has its own native name for the sacred room, but all of which use the word estufa familiarly. There is no more reason for picking the Moqui term for estufa than for picking the Queres, or the Tigua or the Jemez or the Zuñi, except that a clever investigator, who knew little Spanish and less history, learned this Moqui word and succeeded in writing it into the Bureau of Ethnology.

The estufas of the Pueblo Bonito are among its notable features, both in their number and their character. There are twenty-seven of them, ranging from ten to fifty feet in diameter. A strange feature is that in every single case the builders made first a square room; and then inside it a circular one, filling the space between the wall with

earth and masonry. And some of the roofing timbers were extraordinarily massive—pine logs forty feet long and eighteen inches in diameter.

A few hundred yards to the west are the ruins of the Pueblo del Arroyo; its western wall 270 feet long, and its wings 125 and 135 feet respectively. The extremities of the wings are connected by a semicircular double wall, partitioned off into a series of rooms. Part of the third-story walls are still standing, and the original height of the pueblo was four stories. These walls also are extremely good masonry. This pueblo has two estufas in the court, three within the walls, and four outside the main building.

A quarter of a mile up the valley, and looking up to the same fine cliff, are the important and striking ruins of Chettro-Kettle, "Rain Pueblo." This great house measured 440 by 250 feet, and was five stories high. The walls still stand to a height of thirty feet, and some of the ancient timbers are still in place, well preserved in that arid land. The masonry is exceptionally good—of fine-grained grayish-yellow sandstone, broken into small tablets and laid in thin mortar of adobe mud. In places, courses of heavier stone are laid parallel at intervals, giving an ornamental effect. Jackson in 1875 estimated that the building contained not less than 315,000 cubic feet of masonry.

THE "CLIFF PALACE," CLOSE

Photos by Mary A. Drake

SAME, SHOWING NATURAL CAVE WHICH SHELTERS IT

On the second ledge of the mesa, just north of Pueblo Bonito, is a unique, enigmatic trench, a rounded channel three inches wide and three-deep, carved smoothly in the living rock, and running some hundreds of yards. It follows the contours of the bed-rock, up hill and down, and could not, therefore, have served as a run for water. About a dozen feet south of it are the remains of a stone wall, which was once probably waist-high. I think no explanation of the purpose of this mysterious groove has been found; but it was undoubtedly "ceremonial"—for some of the innumerable mystic rites of the medicine-men. It is a wonder that the yellow writers have not proclaimed it a channel to catch the blood of human sacrifice! A great quantity of notable prehistoric artifects have been taken out of the ruins of the Pueblo Bonito. The Art of these people in the Stone Age was high. They wrought beautifully in wood and bone, in turquoise—even to incrusting shell with it—in obsidian, jaspers and agates. Some of the arrowheads are of exquisite beauty.

A good many times, in the past, I have felt called to pay my respects to various dictionaries and encyclopedias for their ignorance of the early history of America, and about our great West in general. The Arm-Chair Scholar has peppered our foremost text-books with blunders

beyond reason or excuse. It is little wonder that the mere lay reader is so ignorant of his own country, when the "authorities" whom he may consult are themselves so often blind leaders of the blind.

And now and then there is need to correct the Shamans who do their best to discourage us from studying the most fascinating subject in the world —which is the Story of Man—by hiding it behind a smoke-screen of awesome and preposterous Latin and Greek names. They defend the practice of "scientific terminology" as necessary to precision; but it hurts them when they are caught tripping on their own tools.

If they insist on using Latin words—and "Artifect" is a very good term for an article fashioned with more or less skill by the human hand—they should at least be safe in their Latin. But they all write it "Artifact"—excepting a few who write "Artefact." It is a pity for a rude old frontiersman to have to meddle, but I must tell these scientists they don't know their conjugations. The word is not like "manufacture" or "benefactor"—the compounding of an ablative or an adverb with the past participle of the Latin verb *facio.* It is from a "Late Latin" compound verb, which in the compounding changes the "e" of *arte* to "i," and the "a" of *facio* to "i"—the verb *artificere, artifeci, artifectum.* It is the

same way that we get the common adjective "artificial." If these people were right, it would be "artifacial"—and "benefacial" and "sacrifacial," and many other things as absurd as a pundit without wit.

An even plainer example is when *per* and *facio* were compounded and made *perficio, perficere, perfeci, perfectum.* So we have "Perfect" and not "perfact."

So "artifect" it is, for comprehensive name of the articles hand-made by the ancient Americans.

And while we are speaking of words—I shall die content when I have persuaded Eastern editors and other fossilliterates that the Mexicans and our cow-boys do *not* talk Greek; and that their ponies are *not* named because there is anything the matter with their Bronchial tubes; that "ch" is pronounced in Spanish just as it is in English, and not as in Greek—in fine, that the Western pony is plain B-R-O-N-C-O, Spanish for wild; and that any one who persists after all these years in spelling it BRONCHO should be given a term at enforced "bronco-busting"—which is a treatment competent to shake the nonsense out of almost any one.

These great houses were generally far from regular, for the simple reason that there never was a "master architect" to control the structure.

Every family built its part of the tenement to suit itself. There could be no "bossing" in such things, for Indians are essentially tribal, and under that organization anything like a feudal authority is an absolute impossibility. Still, the builders agreed very well as to the general plan, and the great structure was generally of a very creditable symmetry.

The romantic Cueva Pintada,[1] which Bandelier and I discovered and made known, is a very good type of these caves on a smaller scale, being only

[1] "Painted Cave," so called from the pictographs in red ocher which adorn its concave walls. I may as well stop right here to say that exaggerated importance has commonly been given to the picture writings and picture cuttings which occur by the innumerable ten thousands all over the great West. There are very few cañons in the Southwest, or cliffs anywhere this side the Rockies, where you may not find pictographs, rudely painted on the smooth rock with ocher or other mineral color; or pictoglyphs, generally on harder rock, where the designs were made by pecking with a sharp splinter of stone. They sometimes have a scientific value as indicating what class of Indian once dwelt in that locality; or what animals they were familiar with, or their different conceptions of the great Awanyu or Plumed Serpent which was far more important in the ancient lore of the First Americans from Colorado to Guatemala, than St. George and his dragon ever were in England. But these graphs and glyphs were simply pictures; symbols used by the aborigines in decorating their pottery and basketry and weaving. They were not "writing" in our sense of the word. They did not record events. They had no relation whatever to the ingenuity with which, many centuries later, the Plains Indians sometimes decorated the tanned parchment of a buffalo robe with a pictorial "account" or sketch of the chief events and achievement of the owner. (Awanya, tripartite symbol shown on back cover).

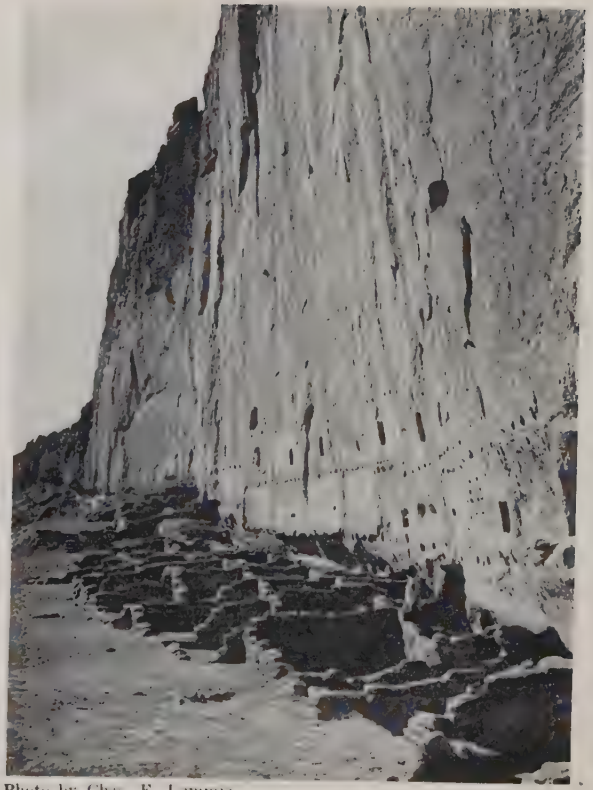


Photo by Chas. F. Lummis

TALUS PUEBLO, RITO DE LOS FRIJOLES

Back-plaster of masonry rooms on cliff, and three-story caves

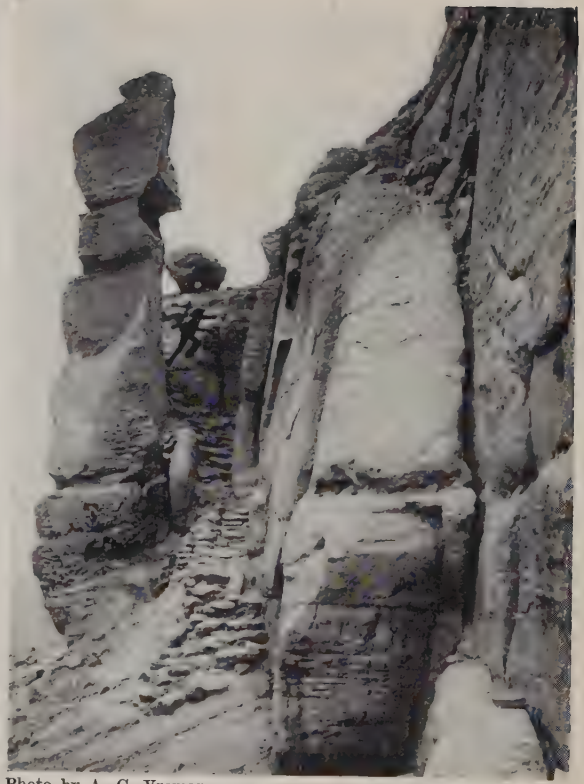


Photo by A. C. Vroman

TRAIL TO "FIRST MESA," MOQUI

about fifty feet in diameter. It looks very much like the bowl of a gigantic ladle set up in the cliff fifty feet above its foot. It contains several cave-rooms, but no houses of masonry, though these occur at other points of the cliff.

To me the real cave-dwellings are the most interesting of all these strange classes of prehistoric ruins. They are perhaps not necessarily older than the cliff-built houses, though they were made first where the two occur together. As I have said, those building differences were not of time, or development, or tribe, but merely of locality—but they seem so much farther from us.

Oh, the cave homes! To see them carries one back to when our own ancestors, and all mankind, dwelt in crannies of the rock, and knew no weaving, and wore only the skins of wild beasts—those far dim days when they had not iron, nor any other metal, and when fire itself was new, and the savage stomach was all the conscience and all the brain that man knew he had. At that, hunger is still good for the brain!

The most extensive and the most wonderful cave-communities in the world are in the great Cochití upland, one of the most interesting regions in America, from its geologic as well as its archeologic character. See Chapter XXX.

CHAPTER XX

"MONTEZUMA'S WELL AND CASTLE"

Two Notable Spots, Despite Their Ignorant Misnomers—Ancient Homes by a Gloomy Tarn and in a Wild Cliff

OF course Montezuma—who was the war-chief of an ancient league of Mexican Indians, and emphatically not "Emperor of Mexico," despite Prescott and the Romantic School—never had anything more to do with our Southwest than Napoleon or Cæsar did. The talk of Aztecs in New Mexico or Arizona is wholly absurd and without a shadow of foundation. The tradition of Montezuma up here was nothing more nor less than an invention of Mexican politicians before our Mexican War, a propaganda cleverly introduced among the Pueblo Indians with the idea of making them friendly to Mexico as against the United States. These myths die hard, and careless writers still keep them current; but it is long since there was any possible excuse for them—since Lewis H. Morgan in "The North American Review" in 1866 pricked Prescott's iridescent

bubble of Montezuma's "empire," and since Bandelier drove the last nail in the coffin of the Romantic School.

But their Mother Goose christening does not detract from the interest of two very notable localities, which Montezuma would have found worth while, if he had ever seen them.

The great Mogollon Plateau of western Arizona is an extremely interesting region. The word means in Spanish a "sponge," or parasite; but the region was named for Juan Ignacio Flores Mogollon, who was governor of New Mexico (then including Arizona) from 1712 to 1715. An apparently boundless plain, three hundred miles across, with an average heighth above the sea greater than that of the tallest mountains in the East, crowned by the noble triad of the "San Francisco peaks" near Flagstaff, cleft here and there with sudden cañons, broken on the north by the terrific gorges of the Colorado, it breaks off on its southern edge by sudden and awesome cliffs into the Tonto Basin. This gets its name from the Tonto ("Fool") Indians—undeservedly so called by the Spanish; a mixture of Pinaleño and Coyotero Apaches, Yavapais, etc. Though it is called a "basin," there is nothing bowl-like in its appearance, even as one peers down thousands of feet into it from the commanding "rim" of the Mogollon Plateau. It is rather a vast chaos of

crags and peaks, which look as though they had been rolled into it from a great breaking-off place. Here was the scene of one of the most brilliant campaigns of General Crook against the Apaches. Here, also, were some of the most famous border feuds. South are the noble ruins of Casa Grande, and all the Gila valley's relics of the prehistoric. The Salt River Valley is one of the richest fields for the archeologist; and the country of the Verde is nowise behind it.

The Rio Verde is a typical stream of the arid lands. It gets its name of "Green River" from the ribbon of verdure its valley draws across the desert. Far to the north, over the purple rim-rock of the Mogollon, peer the white peaks of the San Francisco range. Nearer are tall, cliff-sided mesas, striking in form and color, and rent by shadowy cañons. You can come here by way of Prescott to Camp Verde, an old government post of the days of Apache warfare; or down from the pine-forested plateau of Flagstaff, by way of Oak Creek, a picturesque eighty-mile drive. The whole region is full of prehistoric ruins.

Beaver Creek enters the Verde about a mile above the abandoned fort. Twelve miles up its little cañon is "Montezuma's Well." At this point Beaver Creek has eaten away the side of a rounded limestone hill in a picturesque cliff of more than one hundred feet. It looks like thou-

sands of other hills in the Southwest; but as you come over its shoulder, you catch your breath—for at the top of the hill—"there ain't no top." Instead, there is a great hole, about two hundred feet in diameter, and eighty feet from the edge of its circling cliff to the black water. At first flush one would take it for a volcanic crater, of which several of the Southwest, particularly one of historic import in the Zuñi Plains, contain lakes at the bottom. But the unburned limestone cliffs which wall the "Well" settle that without further speculation. It is a huge "sink," where the great limestone stratum has dropped through into some terrible subterranean abyss hollowed out by burrowing springs. Of course, all such mysterious lakes are "bottomless." I was assured that a sounding-line had been let down 380 feet without finding bottom in this one.

The waters do not lave the foot of a perpendicular cliff all around the sides of that fantastic well. The unfathomed "slump" is in the center, and is separated from the visible walls by a narrow, submerged rim. One can wade out a few feet in knee-deep water—if one have the courage in that "creepy" place—and then, suddenly as walking from a parapet, step off into the bottomless. I have had the same "slump" in the great volcanic lake of Amatitlan, in Guatemala; but that is of clear water and sunny shores, and there

is nothing ghastly about it as here. Between this water-covered rim and the foot of the cliff is, in most places, a wild jumble of enormous square blocks, fallen successively from the precipices and lodged here before they could tumble into the lower depths.

There are two places where the cliff can be descended from top to water's edge. Elsewhere it is inaccessible. Its dark, stained face, split by peculiar cleavage into the semblance of giant walls, frowns down upon its frowning image in that dark mirror. The whole scene is one of utter grimness. Even the eternal blue of an Arizona sky, even the rare fleecy clouds, seem mocked and changed in that deep reflection.

Walking around the fissured brink of the Well eastward, we become suddenly aware of a new interest—the presence of a human past. Next the creek, the side of the Well is nearly gone. Only a narrow, high wall of rock, perhaps one hundred feet through at the base, less than a score at the top, remains to keep the Well a well. On one side of this thin rim gapes the abyss of the Well; on the other the abyss to the creek. Upon this wall —leaving scarce room to step between them and the brink of the Well, and precariously clinging down the steep slope to the edge of the cliff that overhangs the creek—are the tousled ruins of a strong stone building of many rooms, the typical

© by Chas. F. Lummis

"MONTEZUMA'S WELL"

From cave near water-level. Cliff-house in center back

fort-home of the ancient Pueblos. Its walls are still, in places, six to eight feet high; and the student clearly makes out that the building was of two and three stories. It was a perfect defense to the Indians who erected it; and was not only safe itself on that commanding perch, but protected the approach to the Well. This is the only town I know of that was ever built upon a natural bridge; as some houses in this same region are probably the only ones placed under such a curiosity.

Leading from the center of this fort-house, the only easy trail descends into the Well; and it is so steep that no foe could prosper on it in the face of opposition. This brings us to a tiny green bench six or eight feet above the level of the dark lake, where two young sycamores and a few live-oak bushes guard a black cavity in the overhanging cliff. We look across the dark waters to the western wall, and are startled to see in its face a perfect cliff-house, perched where the eagle might build his nest. A strange aery for a home, surely! There, on a dizzy little shelf, overhung by a huge flat ledge which roofs it, stands this two-roomed type of the human dwelling in the old danger-days. From its window-hole a babe might lean out until he saw his dimpled image in the somber sheet below. Only at one end of the house, where a difficult trail comes up, is

there room on the shelf for a dozen men to stand. In front, and at its north end, a goat could scarce find footing. The roof and floor and rear wall are of the solid cliff, the other three walls of stone masonry, perfect and unbroken still. A few rods along the face of the rock to the north is another cliff-dwelling not so large nor so well preserved; and farther yet is another. It is fairly appalling to look at these dizzy nests and remember that they were homes! What eagle-race was this whose warriors strung their bows, and whose women wove their neat cotton tunics, and whose naked babes rolled and laughed in such wild lookouts—the scowling cliff above, the deadly lake so far below! Or, rather, what grim times were those when farmers had to dwell thus to escape the cruel obsidian knife[1] and war-club of the merciless wandering savage.

But if we turn to the sycamore at our back, there is yet more of human interest. Behind the gray debris of the cliff gapes the low-arched mouth of a broad cave. It is a weird place to enter, under tons that threaten to fall at a breath; but there have been others here before us. As the eye grows wonted to the gloom, it makes out a flat surface beyond. There, forty feet back from the mouth, a strong stone wall stretches

[1] The only knives in those days were sharp-edged flakes of obsidian (volcanic glass) and other stone.

across the cave; and about in its center is one of the tiny doors that were characteristic of the Southwest when a doorway big enough to let in a whole Apache at a time was unsafe. So the fort-house balanced on the cliff-rim between two abysses and the house nestled in crannies of the bald precipice were not enough; they must build far in the very caves! That wall shuts off a large, low, dark room. Beyond is another, darker and safer, and so on. To our left is another wall in the front of another branch of the cave; and in that wall is a little token from the dead past. When I went there in June, 1891, my flash-light failed, and I lit a dry *entraña*[1] to explore during the hour it would take the lens to study out part of the cave in that gloom. And suddenly the unaccustomed tears came in my eyes; for on the flinty mortar of that strange wall was a print made when that mortar was fresh adobe mud, at least five hundred years ago, maybe several thousand—the perfect imprint of a baby's chubby hand. And of that child, whose mud autograph has lasted perhaps as long as Cæsar's fame, who may have wrought as deep impression on the history of his people as Cæsar on the world's, we know no more than that careless hand-print, nor ever shall know.

This left-hand cave is particularly full of in-

[1] The buckhorn-cactus, which was the prehistoric candle.

terest, and is probably the best remaining example of this class of home-making by the so-called "Cliff-dwellers." With its numerous windings and branches, it is hundreds of feet in length; and its rooms, formed by cross-walls of masonry, extend far into the heart of the hill, and directly under the fort-house. It seems to have been fitted for the last retreat of the people in case the fortress and the cliff-houses were captured by an enemy. It was well stored with corn, whose mummied cobs are still there; and—equally important—it had abundant water. The Well seems to have no outlet—the only token of one visible from within being a little rift in the water-mosses just in front of the caves. But in fact there is a mysterious channel far down under the cliff, whereby the waters of the lake escape to the creek. In exploring the main cave one hears the sound of running water, and presently finds a place where one may dip a drink through a hole in the limestone floor of a subterranean room. The course of this lonely little brook can be traced for some distance through the cave, below whose floor it runs. Here and there in the rooms are lava hand-mills and battered stone hammers and other relics of the forgotten people.

Returning to the creek at the foot of the hill, and following the outer cliff up-stream a few hundred feet, we come to a very picturesque spot

under a fine little precipice whose foot is guarded by stately sycamores. Here is the outlet of the subterranean stream from the Well. From a little hole in the very base of the cliff the glad rivulet rolls out into the light of day, and tumbles heels over head down a little ledge to a pretty pool of the creek.

The water of the Well is always warmish, and in winter a little cloud of vapor hovers over the outlet. Between the cliff and the creek is pinched an irrigating-ditch, which carries the waters of the Well half a mile south to irrigate the ranch of a small farmer. Probably no other man waters his garden from so strange a source.

About half-way between Montezuma's Well and Camp Verde is the interesting cliff-house, the best specimen in southern Arizona, called Montezuma's Castle. On the north the valley is walled by a limestone cliff two hundred feet high, beautifully white and beautifully eroded. Half-way up the cliff is a huge natural cavity, formed by ancient erosion, and resembling a giant basin tilted on edge. And in this great hollow, eighty feet from the foot of the cliff, stands the stately pile of Montezuma's Castle. There are many far larger ruins of the ancient Cliff-dwellers; but this is imposing, and is unique in its contours.

From the clear, still stream, hemmed in by

giant sycamores that have doubtless grown only since that strange, gray ruin was deserted, the foot of the cliff is about three hundred feet away. The lowest foundation of the castle is more than eighty feet above the creek; and from corner-stone to crest the building towers fifty feet. It is five stories tall, more than sixty feet wide in its widest part, and built in the form of a crescent. It contains twenty-five rooms of masonry; and there are, besides, many cave-chambers below and at each side of it—small natural grottos neatly walled in front and with wee doors. The timbers of the castle are still in excellent preservation—a durability impossible to wood in any other climate—and some still bear the clear marks of the stone ax with which they were cut. The rafter-ends outside the walls were "trimmed" by burning them off close. The roofs and floors of reed thatch and adobe mud are still perfect except in two or three rooms; and traces of the last hearth-fire that cooked the last meal, dim centuries ago, are still there. Indeed, there were, in my time, even a few relics of the meal itself—corn, dried cactus-pulp, and the like. And upon a peg hung a prehistoric sandal, woven of the fiber of the yucca.

The fifth story is nowhere visible from below, since it stands far back upon the roof of the fourth and under the hanging rock. In front it

© by Chas. F. Lummis

"MONTEZUMA'S CASTLE"

has a spacious veranda, formed by the roof of the fourth story, and protected by a parapet which the picture shows with its central gateway to which a ladder once gave access. It is only the upper story which can be reached by an outside ladder—all the others were accessible only through tiny hatchways in the roofs of those below. So deep is the great uptilted bowl in which the castle stands, so overhanging the wild brow of cliff above, that the sun has never shone upon the two topmost stories.

There is but one way to get to the castle, and that is by the horizontal ledges below. These rise one above the other (like a series of shelves, not like steps), ten to fourteen feet apart, and fairly overhang. The aborigines had first to build strong ladders and lay them from ledge to ledge; and then up that dizzy footing they carried upon their backs the uncounted tons of stones and mortar and timbers to build that great edifice. What do you imagine an American architect would say, if called upon to plan for a stone mansion in such a place without a "lift"? The original ladders long ago disappeared; and so had the modern ones once put there by a scientist at Camp Verde. I had to climb to the castle by a crazy little frame of sycamore branches, lashed with shreds of my clothing; dragging it after me from ledge to ledge, and sometimes lashing it to

knobs of rock to keep it from tumbling backward down the cliff. It was a very ticklish ascent, and gave me full understanding how able were the builders, and how secure they were when they had retreated to this high-perched fortress and pulled up their ladders—as they did every night. A monkey could not scale the rock; and the cliff perfectly protects the castle above and on each side. Nothing short of modern weapons could possibly affect this lofty citadel. Montezuma's Castle is now cared for by the State, and is easily visited.

Down in the valley at its feet—as below Montezuma's Well and the hundreds of other prehistoric dwellings in the cañon of Beaver—are still traces of the little fields and of the *acequias*[1] that watered them. Even in those far days the Pueblos were patient, industrious, home-loving farmers, but harassed eternally by wily and merciless savages—a fact which we have to thank for the noblest monuments in our new-old land. Had they been unharried, they never would have become architects, but would have dwelt in wigwams and wickiups.

[1] The characteristic irrigating-ditches of the Southwest. Their Moorish name comes from Spain; but they were here before Columbus.

© by Chas. F. Lummis

THE GREEN CORN DANCE, PUEBLO OF SANTO DOMINGO

(Second dancer from right is one of the Koshare, or Delight Makers)

CHAPTER XXI

AN ODD PEOPLE AT HOME

Each Town a Republic—Domestic and Social Life of the Pueblo Indians—The Serious Task of a Godmother

IN speaking of this strange land, I must give a hasty glimpse at the home life of the Pueblo Indians as I knew it for so many years. While modern ways are fast changing the surface of this quaint life and many of the practices that I knew are no longer to be seen, the essential customs and beliefs have not disappeared altogether. A social organization which looks upon children as belonging rather to the mother than to the father, which makes it absolutely imperative that husband and wife shall be of different divisions of society, which makes it impossible for a man to own a house, and gives every woman entire control of her home—seems different enough from what most of us are used to; but these, and many other equally remarkable points of etiquette, have prevailed in the Southwest for immemorial centuries.

The basis of society in the twenty-six quaint town-republics of the Pueblos—communities which are by far the most peaceful and the best-governed in North America—is not the family, as with us, but the clan. These clans are clusters of families—arbitrary social divisions, of which there are from six to sixteen in each Pueblo town. In Isleta there are sixteen clans—the Sun People, the Earth People, the Water-pebble People, the Eagle People, the Mole People, the Antelope People, the Deer People, the Mountain Lion People, the Turquoise People, the Parrot People, the White Corn People, the Red Corn People, the Blue Corn People, the Yellow Corn People, the Goose People, and the Wolf People. Every Indian of the 1150 in the pueblo belongs to one of these clans. A man of the Eagle People cannot marry a woman of that clan, nor vice versa. Husband and wife must be of different clans. Still odder is the law of descent. With us—and all civilized nations—descent is from the father; but with the Pueblos and nearly all aboriginal peoples it is from the mother. For instance, a man of the Wolf Clan marries a woman of the Mole Clan. Their children belong not to the Wolf People but to the Mole People, by birth. But if the parents do not personally like the head man of that clan, they can have some friends adopt the children into the Sun or Earth or any other clan.

Photo by Chas. F. Lummis

A PUEBLO INTERIOR, ISLETA
Note swinging cradle

There are no Indian family names; but all the people here have taken Spanish ones—and the children take the name of their mother and not of their father. Thus, my landlady was the wife of Antonio Jojola. Her own name is Maria Gracia Chihuihui; and their roly-poly son—who is commonly known as Juan Gordo, "Fat John," or, as often, since I once photographed him crawling out of an adobe oven, as Juan Biscocho, "John Biscuit"—is Juan Chihuihui. He grew up to marry and have children and they are not Chihuihuis nor Jojolas, but bear the Spanish last name of his wife. This pueblo, however, is changing from the old customs more than are any of the other towns; and in some families the children are divided, the sons bearing the father's name, and the daughters the mother's. In their own language, each Indian has a single name, which belongs to him or her alone and is never changed.

The Pueblos without exception (save the Moqueños) now have their children baptized in a Christian church and given a Spanish name. But those who are "True Believers" in "the Ways of the Old" have also an Indian christening. It is no light office to be godfather or godmother under this old dispensation—nothing so easy as our old New England fashion of opening the family Bible at random and taking the first male or female

name. The god-parent seeks the onerous privilege. My youngest daughter was born in the Pueblo of Isleta, where I had won a great many dear friends. Wise old Marcelina Abeita, a Pueblo woman of great intelligence and character, begged to be allowed to be *madrina.* I was glad to give the permission. Thereupon this fine woman, turning over her store and other interests to her family, went into absolute seclusion, fasting for four days, even from water. Before dawn on the fifth day she stepped outside her darkened room into the dim light and stood there waiting and praying while the east began to turn blue and then yellow. And then—body and mind exalted by the fast and by intense thought—she was "shown" the name for my babe. And when the sun had risen she came to the house and bent over the little one in her Indian cradle and moistened her lips and forehead, and prayed over her to "the Trues," and called her "Tur-be-sé." You have seen the sunburst, when the orb breaks through low clouds in long rays that broaden toward the earth—what we used to call in New England "the sun drawing water." That phenomenon to the Tiguas is a *Turbesé*—and that is the poetic name which a tall young woman wears to this day. Literally, in Tigua, it means "Rainbow of the Sun." For a month after her birth, a great number of Indians came daily to see her,

bringing little gifts of silver, calico, chocolate, eggs, Indian pottery, and the like. The christening made her a member of the Water Pebble Clan, like her godmother.

When a child is born in a Pueblo town, a curious duty devolves upon the father. For the next eight days, he must keep a fire going—no matter what the weather—in the quaint little *fogon* or adobe fireplace, and see that it never goes out by day or night. This sacred birth-fire can be kindled only in the religious ways—by the fire-drill, flint-and-steel, or by a brand from the hearth of the Cacique. If paterfamilias is so unlucky as to let the birth-fire go out, there is but one thing for him to do. Wrapping his blanket around him, he stalks solemnly to the house of the Cacique, enters, and seats himself on the floor by the hearth—for the Cacique must always have a fire. He dare not ask for what he wants; but making a cigarette, he lights it at the coals and improves the opportunity to smuggle a living coal under his blanket —generally in no better receptacle than his own tough, bare hand. In a moment he rises, bids the Cacique good-by, and hurries home, carefully nursing the sacred spark, and with it he rekindles the birth-fire. It is solemnly believed that if this fire were relighted in any other manner, the child would not live out the year.

The Pueblo men—contrary to the popular idea

about all Indians—take a very generous share in caring for their children. When they are not occupied with the duties of busy farmers, then the fathers, grandfathers, and great-grandfathers are generally to be seen each with a fat infant slung in the blanket on his back, its big eyes and plump face peeping over his shoulder. The white-haired governor, the stern-faced war-captain, the grave *principales*—none of them are too dignified to "tote" the baby up and down the courtyard or to the public square and to solemn dances; or even to dance a remarkable domestic jig, if need be, to calm a squall from the precious riders upon their backs. As much is true of the savage Apaches, of whom I became very fond in 1886, in our last campaign against Geronimo.

A Pueblo town is the children's paradise. The parents are fairly ideal in their relations to their children. They are uniformly gentle, yet never foolishly indulgent. A Pueblo child is almost never punished, and almost never needs to be. Obedience and respect to age are born in these brown young Americans, and are never forgotten by them. I never saw a "spoiled child" in all my long acquaintance with the Pueblos—save a few returned from government schools.

The Pueblo woman is absolute owner of the house and all that is in it, just as her husband owns the fields which he tills. He is a good

TAOS—THE CEREMONIAL RUNNERS (one starting forward to smash my camera)

Photos by Chas. F. Lummis

ISLETA—COMBING FRIEND HUSBAND

farmer and she a good housewife. Fields and rooms are generally models of neatness.

The Pueblos marry under the laws of the Church; but many of them add a strange ceremony of their own, which was their custom when Columbus discovered America. The betrothed couple are given two ears of raw corn; to the youth a blue ear, but to the maiden a white one, because her heart is supposed to be whiter. They must prove their devotion by eating the very last hard kernel. Then they run a sacred foot-race in presence of the old councilors. If the girl comes in ahead, she "wins a husband" and has a little ascendancy over him; if he comes in first to the goal, he "wins a wife." If the two come in together, it is a bad omen, and the match is declared off.

Pueblo etiquette as to the acquaintance of young people is extremely strict. No youth and maiden must walk or talk together; and as for a visit or a private conversation, both the offenders —no matter how mature—would be soundly whipped by their parents. Acquaintance between young people before marriage is limited to a casual sight of each other, a shy greeting as they pass, or a word when they meet in the presence of their elders. Matches are not made by the parents, as was the case with their Mexican neighbors until very recently—and as it still is in

many European countries—but marriages are never against the parental consent. When a boy wishes to marry a certain girl, the parents conduct all the formal "asking for" her and other preliminaries.

The very curious division of the sexes which the Spanish found among the Pueblos 350 years ago has now almost entirely disappeared—as have also the community-houses which resulted from the system. In old times only the woman, girls, and young children lived in the dwellings. The men and boys slept always in the estufas. Thither their wives and mothers brought their meals, themselves eating with the children at home. So there was no family home-life, and there never was until the brave Spanish missionaries gradually brought about a change to the real home that the Indians so much enjoy to-day.

When an Indian dies, there are many curious ceremonials besides the attempt to throw the witches off the track of his spirit. Food must be provided for the soul's four days' journey; and property must also be sent on to give the deceased "a good start" in the next world. If the departed was a man and had horses and cattle, some of them are killed that he may have them in the beyond. His gun, his knife, his bow and arrows, his dancing-costume, his clothing and other personal property are also "killed" (in the Indian

PUEBLO WOMAN WEAVING A BELT

RACE OF THE CACIQUE

Photos by Chas. F. Lummis

PUEBLO INDIANS

phrase) by burning or breaking them; and by this means he is supposed to have the use of them again in the other world, where he will eat and hunt and dance and farm just as he has done here. In the vicinity of every Pueblo town is always a "killing-place"—entirely distinct and distant from the consecrated graveyard where the body is laid—and there the ground is strewn with countless broken weapons and ornaments, earthen jars, stone hand-mills, and other utensils—for when a woman dies, her household furniture is "sent on" after her in the same fashion. The precious beads of coral, turquoise, and silver, and the other silver jewelry of which these people have great quantities, is generally laid away with the body in the bare, brown graveyard in front of the great adobe church.

Here, too, on All Souls' Day, gather the women of the pueblo, trim and comely in their festal best; each bearing upon her head a flaring rushen *chiquihuite* heaped with offerings—mostly grotesque-shaped little loaves of sweetened, well-shortened bread they have for days been baking in the outdoor *hornos*. There are no headstones in the wind-swept Campo Santo; but each woman knows her own; and kneeling there with her offering, somehow keeps alight the guttering candles she sets in the indeterminate sand.

CHAPTER XXII

THE WONDER-WORKERS

Native Magicians of the Southwest—Navajo and Pueblo Jugglers and Their Astonishing Feats—Growing the Sacred Corn

OUR civilized "magicians," like Herrmann and Houdini and their kind, earn their livelihood by exhibiting their marvelous dexterity, but without any claim to superhuman powers. They avowedly rely only upon their hands, educated to surpassing cleverness by tedious years of practice, and upon various ingenious machines and accessories. Perhaps this frankness is partly due to the fact that any supernatural pretense would be laughed at by their intelligent auditors; if we were all prepared to accept them as *real* miracle-workers, I am not at all sure that some of them would not willingly pose as such.

With the aboriginal wizard there is no such stimulus to frankness. If his audiences have eyes incomparably less easy to be fooled than ours, their intellectual horizon is narrower. To outdo

those matchlessly observant eyes, he has only to be matchlessly adroit; and when the eyes are once over-matched, his auditors are ready to accept any explanation he may choose to give. He therefore claims supernatural powers, given to him by "Those Above"; and my studies convince me that he himself believes this as fully as do any of his people, so easy is it for us all, in time, to impose upon ourselves even more than upon others.

Superstition was the corner-stone of all the strange aboriginal religions. Everything which the Indian did not absolutely understand, he attributed to a supernatural cause—and to a personified one. The rainbow is a bow of the gods; the lightning, their arrows; the thunder, their drum; the sun, their shield. The very animals are invested with supernatural attributes, according to their power to injure man or to do him good. In such a system as this, a man who can do (or appear to do) what others cannot is naturally regarded as having superhuman gifts; in short, he is a wizard. The chief influence and authority with all aboriginal tribes lie in their "Medicine-men," and these are always magicians. They have gained their ascendancy by their power to do wonderful and inexplicable things; and this ascendancy is maintained in the hands of a small, secret class, which never dies out, since it is constantly recruited by the adoption of boys into the order,

to which their lives are thenceforth absolutely devoted. The life of a medicine-man is a fearfully hard one. The manual practice alone which is necessary to acquire that marvelous legerdemain is almost the task of a lifetime; and there are many enormous fasts and other self-denials which are so rigorous that these magicians seldom attain to the great age which is common among their people. With the Indian magicians as with ours, conjuring is the means of livelihood, but in a different and indirect way. They neither charge an admission fee nor take up a collection; but receive less direct returns from the faith of their fellow-aborigines that they are "precious to the Trues," and that their favor should be cultivated by presents. The jugglers of India, of whom we read so much, will exhibit their marvelous tricks to any one for a consideration; but no money in the world would tempt one of *our* Indian jugglers to admit a stranger to the place where he was performing his wonders. To him, as to his people, it is a matter not of money but of religion.

The aboriginal magicians with whom I was best acquainted are the medicine-men of the Navajo and Pueblo Indians of New Mexico and Arizona, and astounding performers they are. It is impossible to say which are the more dextrous, though the Navajos have one trick which I have

never seen equaled by the world's most famous prestidigitators. If these stern bronze conjurers had the civilized notion of making money by exhibiting themselves, they could amass fortunes. They have none of the cabinets, mirrors, false-bottomed cases, or other appliances of our stage wizards; and they lack that great aid of the latter —the convenient sleeves and pockets. Their tricks are done in a bare room, with a hard clay floor under which are no springs or wires, and with no accessories whatever.

The principal occasions of Pueblo and Navajo magic are at the medicine-makings, when the people gather to see the Shamans (medicine-men) heal sickness, foretell the year, or give thanks to the Trues for its prosperity, and perform other rites belonging to such ceremonials. These medicine-makings among the Pueblos are held in one of the medicine-houses—a great room sacred to the Shamans, and never to be profaned by any other use. There was one just behind the Indian house in which I lived for years. The Navajos hold them in the medicine *hoganda*—a large conical hut, equally devoted to this sole purpose.

After the preliminary prayers to Those Above, the dispersion of evil spirits, and other curious and interesting ceremonies which I have no space to describe here, the business of the medicine-dance is to cure those who are sick or afflicted;

that is, according to the Indian idea, bewitched. There is no giving of remedies, as we understand the phrase; all is magic. The "medicine" (*wahr,* in the language of Isleta) is rather mental and moral than physical; and the doses are from nimble fingers and not from vials. An American "medicine-man" would open his eyes very wide if he could see how these swarthy doctors put up a prescription.

The Shamans dance during the whole of their professional duties, and most of the time have in each hand a long feather from the wing of an eagle. Earlier in the performance these feathers have been used to toss up evil spirits so that the wind may bear them away; but now they serve as lancets, probes, and in fact the whole surgical case and medicine chest. A Shaman dances up to a sick person in the audience, puts the tip of the feather against the patient, and with the quill in his mouth sucks diligently for a moment. The feather seems to swell to a great size, as though some large object were passing through it. Then it resumes its natural size, the Shaman begins to cough and choke, and directly with his hand draws from his mouth a large rag, or a big stone, or a six-inch branch of the myriad-bristling buck-horn-cactus, while the patient feels vastly relieved at having such an unpleasant lodger removed from his cheek or neck or eye. No wonder he had

felt sick! Sometimes the magician does not use the feather at all, but with his bare hands plucks from the body of the sick man the remarkable "disease," which is waved aloft in triumph and then passed around to the audience for critical inspection.

Common to these same medicine-men is the grim illusion of the witch-killing. In the sacrificial bowl of sacred water which stands before him, the chief Shaman is supposed to see as in a mirror—or like our crystal-gazers—everything that is happening in the whole world, and even far into the future. At times, as he bends to blow a delicate wreath of smoke from the sacred cigarette across the magic mirror, he cries out that he sees witches in a certain spot, doing ill to some Indian. The *Cum-pah-whít-lah-wen* (medicine-guards) rush out of the room with their bows and arrows—the insignia of their office, without which they must never appear—to get the witches. In a short time they return, bringing their victims by the long hair. These "dead witches" are in face, dress, and everything else exactly like Indians, except that they are no larger than a three-year-old child. Each has the feathers of an arrow projecting under the left arm, while the agate or volcanic glass tip shows under the right. Of course they are manikins of some sort; but the deception is sickeningly perfect. The guards swing

them up to the very faces of the audience to be looked at; and sometimes drops of apparent blood spatter upon the awed spectators.

Another notable feat of these jugglers is to build upon the bare floor a hot fire of cedar-wood, so close as almost to roast the foremost of the audience. Then the magicians, still keeping up their weird chant—which must never be stopped during the services—dance barefooted and bare-legged in and upon the fire, hold their naked arms in the flames, and eat living coals with smacking lips and the utmost seeming gusto. Of course there must have been some preparation for the fiery ordeal, but what it is no one knows save the initiated.

Another equally startling trick is performed when the room has been darkened by extinguishing the candles which gave light on the other ceremonies. The awe-struck audience sit awhile in the gloom in hushed expectancy. Then they hear the low growl of distant thunder, which keeps rolling nearer and nearer. Suddenly a blinding flash of forked lightning shoots across the room from side to side, and another and another, while the room trembles to the roar of the thunder, and the flashes show terrified women clinging to their husbands and brothers. Outside, the sky may be twinkling with a million stars, but in the dark room a fearful storm seems to be raging. If one

of these aboriginal Jupiters would condescend to manage the lightnings for our theaters, we would have much more realistic stage-storms than we do. These artificial storms last but a few moments, and when they are over the room is lighted up again for the other ceremonies. How these effects are produced I am utterly unable to explain.

The characteristic feature of one of the medicine-dances of the Beer-ahn here in Isleta is the swallowing of eighteen-inch swords to the very hilt, by the naked (except for the tiny breech-clout) performers. These swords are double-edged, sharp-pointed, and apparently about an inch and a half wide. So far as I know, no other of the numerous classes of medicine-men perform the feat.

In the great Navajo medicine-dance of *Dsil-yíd-je Quacal,* one of the most important ceremonies of the "Nine Days' Dance," is the swallowing of the "great plumed arrows" by the almost naked conjurers in similar fashion. After they have been withdrawn from the mouths of the magicians, the magical arrows (which have the ancient stone heads) are applied to the patient, being pressed to the soles of his feet, to his knees, hands, stomach, back, shoulders, crown of head, and mouth.

In this same remarkable and almost endless

Navajo ceremonial, the magicians (generally in a band of ten or a dozen) perform the startling fire-dance. They are clad only in the breech-clout, and each carries in his hands a long bundle of shredded cedar-bark. The dance is performed around an enormous fire in a corral known as the Dark Circle of Branches. Each lights his bark flambeau, and then they run at top speed around and around the bonfire. They hold their torches against their own nude bodies, then against those of their companions, often for two or three minutes at a time; they whip each other with these burning scourges, and rub each other down with them, taking and giving veritable baths of fire as they run madly around the circle, the flame streaming behind them in fiery banners. Dr. Washington Matthews, the foremost student of Navajo customs, has said officially, "I have seen many fire-scenes on the stage, many acts of fire-eating and fire-handling by civilized jugglers, but nothing quite comparable to this."

Another Navajo jugglery is to stand a feather on end in a flaring, pan-shaped basket, and dance with it as a partner. The Indian—in this case sometimes a very young boy—dances in proper fashion around the basket; and the feather dances too, hopping gently up and down, and swaying in the direction of its human partner. If he dances to the north, the feather leans northward; if he

moves to the south, the feather tips southward, and so on, as if the quill were actually reaching out to him!

There is also "magic" in the foretelling of the year, which is done by the chief Shaman and his two first-assistants. This medicine-dance is always by or before the middle of March, many weeks before a green blade of any sort is to be found in the climate of Isleta. These three officials go out from the meeting to the banks of the Rio Grande, and presently return with stalks of green corn and wheat, which they declare was brought to them by the river direct from the Trues. These stalks are handed about among the audience, and then the chief Shaman draws from them the omens for the crops of the coming season.

The last service of the medicine-dance before the benediction-song is the "seed-giving," which is itself a sleight-of-hand trick. The chief fetish of the Shamans is "the Mother"—an ear of spotless white corn with a plume of downy white feathers bound to the head. It represents the mother of all mankind, and during the whole medicine-dance one of these queer objects has been sitting in front of each medicine-man. Now, as all in the audience rise, the chief Shaman and his assistants shake their "Mothers" above the heads of the throng in token of blessing; and out pours a perfect shower of kernels of corn, wheat,

and seeds of all kinds, in a vastly greater quantity than I would undertake to hide in ten times as many of those little tufts.

The most remarkable of the feats of the Pueblo magicians is one of which I cannot write in detail, for I have never seen it; but that the trick is performed, and so well done as to deceive the sharpest-eyed of the spectators, is beyond doubt. The Shamans are said at some special occasion to appear to turn themselves at will into any animal shape; and where a moment before had stood a painted Indian, the audience sees a wolf, or bear, or dog. This is in a line with some of the most famous juggleries of India, and is quite as wonderful a deception as any of them.

These are by no means the only tricks in the repertory of the Pueblo conjurers, but they are sufficient to illustrate the dexterity and adroitness of these swarthy wonder-workers, who produce such surprising results with none of the paraphernalia of more civilized jugglers, and whose magic has such a deep interest beyond its mere bewilderment of the eye. It is one of the potent factors in a religion so astonishing and so vastly complicated that whole volumes would hardly exhaust the interest of the subject.

The Navajo magicians practise all these tricks and numerous others. One of their manifestations which I have never found among the

Pueblos is the "moving of the sun." This takes place in the medicine-lodge at night—the time of *all* official acts of the medicine men. At the appointed time a sun rises on the east (inside the room) and slowly describes an arched course until at last it sets in the west side of the room, and darkness reigns again. During the whole performance a sacred chant is kept up, and once started dare not be interrupted until the sun has finished its course.

But the crowning achievement of the Navajo magicians—and, in my knowledge of any Indian magicians—is the growing of the sacred corn. At sunrise, during one of the protracted ceremonials, the Shaman plants the enchanted kernel in the earth floor of the medicine-lodge in full view of his audience, lays a ceremonial blanket over it, and sits solemnly upon the earth before it, singing a weird song. Presently the blanket bulges in the center; and when he lifts it the hard earth is seen to be cracked, and a tender green shoot is pushing up. He covers it, and sings on; and ever the blanket keeps lifting, visibly, several inches an hour. When he stops his song the growth of the corn stops, and is resumed only when he takes up his chant again. By noon when he lifts the blanket the corn is revealed tall and vigorous and already tasseled out. By sun-set, it is a mature and perfect plant, with its sturdy

stalk, sedgy leaves, and silk-topped ears of corn. How the trick is performed, I have never been able to make a reasonable guess; but done it is, as plainly as I have seen our own famous jugglers perform their mystifying feats.

And speaking of Corn—what do you know about Corn, anyhow? Is it anything more to you than another of the thousand words, each one the name of a miracle, each one to our careless minds only an empty sound? Did you know it on the old farm, and help to plow it and harvest it and husk it? Know anything about those jolly husking-bees of old New England, when the neighbors for miles around rallied to the communal task—precisely as the First Americans did a thousand years ago, and do to this day—and old and young gathered in the big barn, and husked away in merry rivalry, with doughnuts and cider on the side; and the boy who found a Red Ear was privileged to kiss the girls? And the big corn bins, and the shelling of the corn, and the corn meal and the johnny-cake and the hasty-pudding? And did it ever strike you as curious that while grasses are the most useful plants in the world, and support more of animal life than any other food does, and while there are grasses that grow a hundred feet tall, with great culms six inches in diameter, which are used not only for canteens and for ladders but for the reinforcement of walls against

earthquake in the South American countries; and while grasses provide a majority of the food of mankind (for all cereals are of the grass family) —the most beautiful and the most useful of all grasses is our own purely American plant, the Maize or Indian Corn? You may remember that it was this plant which kept our Pilgrim Fathers from starvation. It also spelled salvation to Captain John Smith's colonists at Jamestown. Neither party had ever seen or heard of it before. And for millenniums it was the chief food of a large proportion of the aborigines of the New World. It was among the first things to be recorded by the Spanish discoverers and explorers, four hundred years ago; and its use was already of great antiquity. How long it took the rude savages of the Stone Age to develop the poor native grasses of Mexico and Guatemala, the *euchlaenas,* by cultivation to this king of cereals, no man can guess. But they certainly did develop the Indian corn, without any help from us. I shall never forget the astonishment and delight of that fine old farmer, J. Stirling Morton, father of Arbor Day, and one-time Secretary of Agriculture, when I showed him a little sack of chosen ears from a Pueblo granary. Few American farmers knew more about actual farming than Mr. Morton did, but he had never seen such corn as this.

Naturally, the maize was originally of "strong" color—a deep red, a dark blue, and intervening shades. It was only as soil lost its pristine vigor that the blond corn seems to have come in. Nothing in all the world of cereals is so beautiful as a tray of the ears of this First American Plant—the reds and blues, and then, by cross-pollenization, the "alphabet" corn, with red, blue, and yellow alternating in a natural marquetry. Looking at one of these variegated ears, you see instantly where the Indian found suggestions for the bead work for which he became famous more than three centuries ago, when Europeans brought glass beads to trade with him.

A plant so valuable and so beautiful was appreciated by the Indians in both senses, and was revered as well. I speak elsewhere of one ceremonial use of the ear of corn by the Pueblos; and of the use of the sacred corn meal and corn pollen in various incantations and prayers. The pollen, particularly, of corn and other "good" plants is to the Indian the most spiritual, refined and exquisite of material offerings.

CHAPTER XXIII

THE BLIND HUNTERS

Little Stone Mountain Lions in Place of Hounds for the Chase—Curious Customs of the Pueblo Nimrods

THE first intelligent thing man ever did was to hunt. Likewise it was the first hard work he ever put himself to—and until this day probably the only hard work that he has counted fun through all the millenniums. Eons before he put a seed on purpose into the ground, that he might profit by its multiplication, he bent his sly, stupid head to devise means by which he might catch living creatures for his food. Lacking the talents of rabbit or bird, he had to circumvent them by devices out of his own head. And the ingenuity, the cunning, the patience it took this lord of creation to capture one of these petty beasts, and the sense of power, the dominion, when he did conquer some inferior creature—these gave the hunt an entirely different complexion from other kinds of hard work. It was a strenuous task to break up and drag in the dead fire-wood to keep him

from freezing in his cave. It was hard work to make garments of bark, or of the mollified skins of beasts. But no one even in the Stone Age ever said to his friend, "Fine day! Let 's go out and have a good time hauling fire-wood!" In the long history of farming, which in time became man's chief reliance for food, I am positive that no yokel ever said to another: "I've got the afternoon off; let 's go over and plow that ten-acre lot."

But the hunt—that is another story. It is not merely the proverbial Britisher: "What a beautiful morning! Let 's go out and kill something." It is the most universal of all instincts, common to every walk of humanity. Curiously, it is most abused by the most civilized peoples. The "game-hog" never existed among savages; they killed what game they required, and no species ever became extinct because of savage hunters. For ages, the millions of First Americans made virtually no impression on the buffalo; and this noblest of bovines roamed the prairies in uncounted millions. When our "superior race" invaded the Plains and shot buffalo from railroad trains, and hunted them for the tongues, and then for the robes, in a decade they obliterated the American bison, killing more than ten million in ten years. Farms have largely displaced the game of our prairie States; but even in the Great American

Desert the wild life is almost gone. When a few fellows can hop into an automobile at dawn and run out a hundred miles into the wilderness and slaughter the quail and rabbits with pump-guns and be home for dinner, even the merciful "limit" imposed in recent years is not enough to protect the game. The sea is harder to depopulate; but until the Tuna Club was founded at the "magic isle" of Santa Catalina by that true sportsman and able writer, Charles Frederick Holder, to prevent such abuses, it was common for a party of respectable people to charter a launch, catch a ton or two of the game Pacific fish, bring them ashore to be photographed with their valiant captors—and then haul them out to sea and dump them overboard. No cannibal, no Stone Age savage, no Neanderthal Man was ever capable of so unsportsmanlike and contemptible a sin.

A real book on hunting, from its beginnings, with all its superstitions and its inventions and its braveries, would be worth while; but I am not writing it just now. I wish only to tell something of the curiosities of the hunt as I knew them in New Mexico and Arizona, among Pueblos, Navajos, Apaches, and other Indians, thirty-odd years ago. Many of these strange beliefs and customs are no longer easy to be seen. The education of the young Indians, the influx of new people, the breaking up of tribal ceremonials, have very

largely changed the old habits. But I tell of things I knew—and that thousands of old men know today among the Mexicans and Indians of the Southwest. And for simplicity, I shall deal chiefly with the hunters I knew best, my good Indian friends of the pueblo of Shee-e-whíb-bac—known to us as Isleta. This, and the strange "sky city" of Acoma are the only ones of the twenty-six inhabited Pueblo towns which occupy the same site they did when the first European, Coronado, came in 1540—a historic fact which I had the good fortune to establish in 1890. Isleta means "Small Island," or islet. The aboriginal name means "Whib stick laid on the lava." The pueblo is built on a low ridge of lava from the craters to the west, which ran into the Rio Grande. At the time of the Conquest, the river had cut its main channel to the east of this lava-flow, but also ran across a neck where the lava had apparently sunk into a depression. This lava reef, about a mile long and an eighth of a mile wide, has something of the shape of a flattened banana—or of the stick used by the prehistoric Pueblos, in the gallant game of "Whib," which is not yet extinct. I have seen very wonderful tourneys, circling the great rock of Acoma, the barefooted runners, belonging to two sides, keeping this stick ahead of them with their toes, as they run like antelope a game of

Photo by Emil Bibo

ACOMA RUNNERS OF THE CEREMONIAL "WHIB" RACE

fifteen or twenty miles. A notable picture of these runners is shown here.

"A hunter's eye" is a parable of keen vision; but in the old Southwest the most important hunters were stone-blind! Which is not so out of keeping, after all—since they themselves are stones. And very pretty stones, these famous little nimrods—snowy quartz, or brilliant agate, or jasper, or a peculiar striped spar which is found in some parts of New Mexico. That is their body. Their eyes are of coral, or blue turquoise from the prehistoric mines in Mount Chalchihuitl near Santa Fé; and their hearts are always of turquoise, which is the most precious thing known to the aborigines of the Southwest, for it is the stone which stole its color from the sky.

"But how can a blind stone with a turquoise heart be a hunter?" Well, that depends on the locality. I do not imagine he would count for much in a Queen's County fox-chase; but out here in New Mexico he can be a hunter very well. Here he is the very king of hunters; and no party of Indians would think for an instant of going out for deer or antelope, or even rabbits, except under his leadership and with his aid.

These stone hunters are the hunt-fetishes of the Indians. They are tiny images of the most successful animals of prey—like the cougar, bear,

eagle, and wolf—rudely wrought from the hard stone into a clumsy but unmistakable likeness. The image alone is not enough. An arrow-head of agate or volcanic glass is always bound with sinew to its right side, and under the turquoise heart is always a pinch of the sacred corn meal. These little stone statues are supposed to communicate to those who carry them all the hunter-craft of the animals which they represent. Every Indian carries a fetish when he hunts, and derives its power from it by putting its mouth to his own and drawing in his breath—"drinking the breath" of the image. This ceremony is indispensable at the beginning of a hunt, and at various stages of its progress. The favorite hunt-fetish among the Pueblos is the mountain lion or cougar, *Keem-eé-deh,* which they deem the king of animals—as we do the great cat of Africa.

The hunter, when he strikes a trail, takes a forked twig and places it in front of a foot-print, with the fork opening backward. This is to trip the fleeing game. Then he draws from his "left-hand bag" (the shoulder-pouch which serves the Indian for a pocket) his fetish, inhales its "breath of strength," and prays to it—or rather to the animal spirit it represents—to help him; and then, before following the trail, imitates the roar of his patron beast, to terrify and bewilder the game. He firmly believes that without these

superstitious ceremonials he would stand no chance at all in the hunt, but that with them he is sure to succeed. Absurd! Yes—ever spit on your bait?

It is difficult for us to realize the importance which the Indian attaches to all matters connected with game. We are at a point in civilization where such things concern us only as pastimes, but to the Indian the hunt is still a corner-stone of life, or has been until so recently that he has not lost the old feeling. A matter so vital to the human race has become the nucleus for a vast quantity of his most sacred beliefs. The animals which are successful hunters are objects of reverence, and he is careful to invoke their aid, that his own pursuit may be as fortunate as theirs. Indeed, the whole process of hunting is involved in an enormous amount of religious "red tape"—for you must remember that the Indian never does *anything* simply "for fun." He enjoys many things; but he does them not for mere enjoyment, but always with a religious consciousness.

Even the Pueblos, who have been farmers and irrigators for unknown centuries, preserve almost unabated their ancient traditions and usages of the chase, and a hunt of any sort is a very religious affair, whether it be a simple foray of two or three men, or one of the great communal hunts in which many hundreds are engaged. One of their chief

branches of medicine-men are those who control all matters pertaining to game. These are named, in the language of the Tigua Pueblos, the *Hoó-mah-koon* ("those who have death in their arms"). According to their folk-lore, the *Hoó-mah-koon* were created just after mankind emerged from the womb of the earth, and were the first of all branches of medicine, except only the *Káh-pee-oo-nin* ("those who are dying of cold," in allusion to the almost naked condition in which they always make their official appearance), who broke through the crust of the earth and led their people out to the light.

In the sacred songs of the *Hoó-mah-koon* of the pueblo of Isleta, where I lived for five years, it is declared that they came here first from the town of the Wolf's Den, one of the picturesque ruins in the great plains east of the Manzano Mountains. The order in Isleta numbers seven men. Beginning in May of every year there is always a series of communal rabbit hunts, one a week for seven weeks. The first of these hunts is under the command of the senior *Hoó-mah-koo-eé-deh* (singular of *Hoó-mah-koon*), the second hunt under the next in rank, and so on until each of the captains of the hunt has had a day in the order of his seniority.

The official crier of the village announces the night before that on the morrow will be *Nah-kú-ah-shu* (the round-hunt)—in stentorian tones

which none but the deaf can fail to hear. That evening the *Hoó-mah-koon* and other dignitaries hold *Nah-wheh* (the drawing-dance), to charm the game. The dancing and singing are supposed (though conducted in a house) to reach and fascinate the ears of all wild animals, so that they cannot hear the approach of the hunter on the morrow; and in the intervals of the dance all who are present smoke vigorously the *Weer*, or sacred cigarette, whose clouds blind the eyes of the game and make them less watchful. The songs sung at the drawing-dance vary according to the game to be hunted next day, and always begin with a refrain that has no meaning but is an imitation of the cry of that animal. Before the great autumn round hunt for deer and antelope, the song is one which may be translated as follows:

HUNTING SONG

Beh-eh eh-k'hay-roh,
Beh-eh eh-k'hay-roh,
Beh-eh eh-k'hay-roh.
I am the mountain lion young man,
I am the mountain lion young man,
I am the mountain lion young man;
Antelope thigh in my house hangs plenty,
Antelope shoulder in my house hangs plenty,
Antelope heart in my house hangs plenty;
I am the mountain lion young man;

Deer head in my house hangs plenty,
Deer liver in my house hangs plenty;
All deer meat in my house hangs plenty;
I am the mountain lion young man.

The dance and other services last most of the night. At the appointed time in the morning the *Hoó-mah-koon* repair to a certain sand-hill on the edge of the plains, about two miles from the pueblo, the invariable starting-point for all hunts to the westward, and thither follow several hundred of the men and grown boys of the village. At a certain sacred spot the chief of the *Hoó-mah-koon* starts a small fire with the most impressive ceremonies, singing meanwhile a chant which relates how fire was first discovered and how transmitted—both of which important deeds are credited to the *Hoó-mah-koon.* None outside that order—not even a member of one of the other branches of medicine-men—dare make that fire, and the chief *Hoó-mah-koo-eé-deh* must light it only in the sacred way, namely, with the ancient fire-drill or with flint and steel. He would expect to be struck dead if he were to kindle it with the impious, new-fangled matches, which are now employed by the Pueblos for all common uses, but must not enter any sacred ceremony whatever.

When the holy fire is well under way the *Hoó-mah-koon* stand around it with bowed heads, invoke the fetishes, and pray to Those Above to

bless the hunt. Then their chief selects two men to lead the hunt, puts them in front of all the crowd, instructs them where to close the circle, and pushes them apart with the command, "*Hai-ko!*" These two start running in divergent lines. In a moment two more are started after them, and two more, and so on until all the hundreds of hunters are in motion along two files like the arms of a V, the knot of *Hoó-mah-koon* forming the apex. The two leaders run on for a designated distance, all the time getting farther apart, and then begin to converge toward one another until they meet at the appointed spot, frequently a mile or two from the starting-point. Meeting, they hold their clubs in the right hand, pass each other on the same side, and make cross-lines on the ground, by which they stand.

By this time a cordon of hunters in the shape of an ellipse has been formed by their followers, and now at the signal from the *Hoó-mah-koon* the cordon begins to shrink inward, the old men smoking continually to keep the game blinded. The hunters are armed only with boomerangs, which they hurl with force and precision that are simply marvelous. Very little game that has been thus surrounded ever escapes, even to the swift-winged quail. A dozen or more of these big surrounds are made in the course of the day, and all the game that is killed in the first two goes to the

Hoó-mah-koo-eé-deh who is in command for that day. The *Hoó-mah-koon* get their peculiar name from the fact that as soon as the first animal is killed they sit down and hug it upon their laps, sprinkling it with the sacred meal.

In the evening, when the successful hunters return to the pueblo, heavily laden with game, they proceed to the house of the Cacique (the chief religious official) and sing before it the following song, unchanged from the days when they hunted the lordliest game on the American continent:

SONG AFTER THE HUNT

Ah, ee-yah, ee-yah, hay h'yah-ee-ah,
Ah, ee-yah, ee-yah, hay h'yah-ee-ah,
Ah, ee-yah, ee-yah, hay h'yah-ee-ah.
Yonder in the Wee-ow-weew-bahn
[In Indian Territory],
There stays the buffalo,
Commander of beasts.
Him we are driving
Hither from yonder.
With him as prey
We are arriving.
With him as prey
Now we come in.

As the last line is sung, some of the hunters enter the house of the Cacique, bearing a present of game.

His own share each hunter carries to his home, and when the animal is cooked its head is invariably given to him who killed it. By eating this the hunter is supposed to acquire something from the animal itself which will make him successful in killing others of its kind. The Pueblos have a curious custom concerning rabbits, which are now more numerous than any other game, hundreds being killed in every round-hunt on the plain. They will not, under any circumstances, fry them, nor touch one which has been thus cooked. The only way in which a True Believer will prepare rabbit is to "make it as people." The animal is skinned and drawn. Then its long ears are twisted into a knot on top of its head; the fore legs are twisted so that their ankles are under the "arm pits," and the hind legs are crossed and pinned behind the back. Why this extraordinary distortion should be deemed to make poor bunny look "like people" I have never been able to learn; nor yet the cause for this custom, except that it was given them "by Those of Old" and that the Trues order it to be continued. After the rabbit has been trussed up in this shape it is roasted in one of the quaint adobe out-door ovens, or stewed whole in a big earthen jar with home-ground corn meal.

No private party ever thinks of starting on a hunting trip without first securing the intercession of the *Hoó-mah-koon* with Those Above for

their success and safety. When a number of men decide to go on a hunt, or on any other journey, they meet and select the wisest among them to go to the *Hoó-mah-koon* and ask them to "give the road." The ambassador chosen for this important and honorable mission at once bids his wife, or sister to prepare the sacred meal, without which no such request would dare be made of the medicine-men. She selects and grinds the white or yellow corn to meal, and wraps it in the ceremonial corn-husk wrapper; and the ambassador thus equipped goes with his request to the chief *Hoó-ma-koo-eé-deh*. The medicine-man takes the sacred meal with his right hand and holds it all the time the ambassador is present, and names the night when he will come to a designated house (that of one of the party), foretell the fortunes of their journey, and "give the road."

After eight o'clock on the appointed night, which is almost invariably the one before the hunters are to start, all the *Hoó-mah-koon* gather at that house, where the hunters are present with such of their friends as desire to be benefited. The *Hoó-mah-koon* go through the usual jugglery of a medicine-dance, and then proceed to forecast the proposed journey, taking their omens in any number of ways, somewhat after the fashion of the soothsayers of ancient Greece and Rome. In one case in my knowledge a prominent Indian here

was going to travel horseback several hundred miles to trade with the Mescalero Apaches. The chief *Hoó-mah-koo-eé-deh* went out and combed the horse that was to be ridden, and returned with the combings, which he began to sort over with great solemnity. At last he handed to the traveler a lot of light hairs with one dark among them, and said:

"You are on your way to break the rifle you carry, for the horse will fall and throw you as you go down a hill. And you will trade the broken rifle for this dark horse," pointing to the one dark hair. The traveler, who is a very reliable Indian, and who made one of the best governors the pueblo ever had, vows that it befell exactly so. His horse threw him, the rifle was broken in the fall, and he traded it for a horse the very color of that hair! Who could ask more convincing proof that the medicine-man had indeed "the power?"

After the fortunes of the journey have been thus foretold, all present join in the following chant. At the words "Hither! Hither!" those who are to travel draw their hands toward them repeatedly, and the others perform a similar incantation with their breath. This is intended to "draw" to the traveler the game or other object of his journey:

SONG BEFORE THE JOURNEY

Hither! Hither!
This way! This way!
[Pointing in the direction to be taken]
Life for-the-sake-of,
Health for-the-sake-of,
Our children for-the-sake-of,
Our animals for-the-sake-of,
Game for-the-sake-of,
Clothing for-the-sake-of,
Thus with empty hands
Thus we go out.

As the last two lines are sung all brush their left palms with their right. After this song the *Hoó-mah-koon* pray to the Trues to bless the journey, and then "give the road;" that is, their official permission to start.

CHAPTER XXIV

AN OLDER SALEM

Witchcraft Still Persists in the Old Southwest —Curious Indian and Mexican Beliefs— Official Execution of Witches

A THIRD of a century ago, when I was writing this book of the Strange Corners, the witches, magicians, medicine-men and other phases of superstition prevailed far more widely in the then Territories of New Mexico and Arizona than they do in those States to-day. Four-fifths of the population could neither read nor write. Mexicans and Indians of a score of tribes, were in an overwhelming majority of the population. For that matter, they still greatly outnumber the "Americans." That they cannot read or write is no crime; nor is it to their discredit they are, in the one case, the Original Americans, and in the other, the descendants of the Spanish heroes who found and tamed the New World. I have lived in many communities and of many kinds—leading cities of the United States and of the Three Americas; pueblos of Indians, Mexican and Bo-

livian and Peruvian hamlets. And I never had anywhere better neighbors, more lovable or truer friends, more honorable or more admirable associates than I found among the Indians and the Mexicans of the Southwest. No New England town—and I knew every township in New England—could afford to patronize any one of the score of Pueblo villages in the Southwest; neither for honesty, for chastity, for respect to law, for neatness, frugality, industry, neighborliness. As for good parents and respectful obedient children, no New England town was in the comparison at all. In education, of course, the little red schoolhouse and the newspaper and touch with the outside world had given them a horizon which my brown neighbors in the Southwest had not attained. But, although unlettered, they were not ignorant. They had the education which fits a man to live his life happily and usefully; and, beyond this, many of them had an esoteric training as long, as arduous, and as voluminous as a corporation lawyer acquires. The old New England town meeting had nothing the better of a *junta* of the *principales* of a pueblo—the wise old men grounded in the unwritten order and law of their people. In fact, the Senate of the United States could hardly afford comparison with the deliberations of this quiet body, where real elo-

quence is common, but an intemperate or ignorant speech would lead to impeachment.

Many changes have come upon New Mexico in these thirty years. Tens of thousands of people have moved in from other States; tens of thousands of the younger generation of Indians and Mexicans have been educated into the things we know, and away from the old ideas of their fathers. But to this day there are tens of thousands in the Southwest who are still "True Believers" in the old ways. They still believe in witches as fervently as did our own God-fearing fathers in New England when they hanged poor old women for witchcraft. In 1888 I had the privilege of photographing three Mexican witches—everybody knew they were, and they did not deny it. I also photographed the old butcher, whom they had bewitched. Patapalo had somehow offended these women; and afterward when they offered him some coffee he was careless enough to drink it, and his leg grew crooked. Rheumatism? Not at all; straight witchcraft! I knew another Mexican much more intelligent than Patapalo who averred solemnly that when he incurred the displeasure of a witch in San Mateo she turned him into a woman. He had to find another witch, in the distant Cañon Juan Tafoya, and pay a handsome price to her to turn him back to a man again.

The old superstitions of the Southwest are narrowing in adherence, but not lost. There are many curious details in the Mexican witch-faith. No witch, for instance, can pass a sign of the cross; and two pins or sticks placed in that shape effectually bar witches from entering the room, or from emerging, if the holy emblem is between them and the door. The spoken name of God or the Virgin Mary breaks a witch's spell at once. It is soberly related by many people of my acquaintance that they employed witches to bear them pick-a-back to great distances; but, becoming alarmed at the enormous height to which the witches flew with them, they cried, "God save me!" or something of the sort, and instantly fell thousands of feet to the ground, but were not badly hurt!

Mexican witches do not fly about on broomsticks, like those in whom our forefathers believed, but in an even more remarkable fashion. By day they are plain, commonplace people, but at night they take the shapes of dogs, cats, rats, or other animals, and sally forth to witch meetings in the mountains, or to prowl about the houses of those they dislike. So when the average Mexican sees a strange cat or dog about his home at night he feels a horror which seems out of place in a man who has proved his courage in bloody Indian wars and all the perils of the frontier.

When witches wish to fly, they generally retain their human form, but assume the legs and eyes of a coyote or other animal, leaving their own at home. Then saying (in Spanish, of course), "Without God and without the Virgin Mary," they rise into the air and sail away. A sad accident once befell a male witch named Juan Perea, whom I knew in San Mateo, but who died years ago. It was asserted that one night he went flying off with the eyes and legs of a cat, leaving his own on the kitchen table. His poor starved shepherd-dog overturned the table and ate the eyes, and Juan had to go through the rest of his life wearing the green eyes of a cat! That the pygmies of Africa should believe such things would not be strange; but what do you think of them as articles of faith for American voters?

We have all watched the shooting-stars with wonder, but with no such feeling as that with which the natives here see them; for here those fiery hails are supposed to be witches flying to their nightly meetings.

Any one bearing the blessed name of Juan (John) has the sole power of catching witches. All he has to do is to draw a nine-foot circle on the ground, turn his shirt inside out, and call the witch, who must at once fall helpless into this circle! As there are innumerable Juans here, they doubtless would have exterminated all the

witches long ago except for the unpleasant "fact" that whenever a John exercised this remarkable power all the other witches in the country fell upon him and beat him to death!

A drunken fellow in Cebolleta a few years ago kicked a witch. In revenge she caused a live mouse to grow in his stomach. The little rodent made its landlord's life miserable for a long time before he could bribe the witch to coax it out through his mouth!

These are fair samples of unnumbered thousands of stories which illustrate the firm faith of my old-time neighbors in witchcraft. It seems childish to speak of them soberly, and yet they are still implicitly believed by more people in the United States than there are in any New England city outside of Boston. In this strange corner of our country witchcraft is a concern of daily thought and dread, as it was in the older world a few centuries ago, when the same superstition splashed all Europe with the blood of unfortunate wretches. I have had even more intimate concern with witchcraft, both as accused and as victim. My photographic and other mysterious work has more than once led suspicious Indians to view me as an *hechicero;* and it is still the common belief among my aboriginal friends that I have been bewitched by some even more powerful wizard.

A stroke of paralysis in 1887 rendered my left

arm powerless for more than three years and a half. The cause was simple enough—the forming of a tiny clot in the brain. But my Indian friends —and even many Mexicans—smiled with a pitying superiority at this explanation. They would never swallow such a silly story; they knew well enough that I had been bewitched. Some even suggested that I should accuse the witch, and have him or her properly dealt with. My final complete recovery—thanks to a powerful constitution and an out-door life—only confirmed their belief. Now they knew I had paid some other witch to cure me.

But let me very pointedly add that they believe—rather more vitally and more universally than we do—some other old-fashioned superstitions. They believe in the fear of God, and reverence to age, in filial and parental obligations, in paying their debts, in honesty and truthful dealing, in chastity and continence and the sacred care of women. They believe in law and order, in authority and charity and tolerance, in mercy and righteousness. They do not believe in divorce, alimony, murder-at-home, race suicide, abandonment or disowning of children. A lynching or a Ku-Klux never blotted their record. And they are hospitable as Abraham and the Patriarchs—not just to "their set," but to any wayfarer. The Puritans, who equally believed in

witches, had none of *that* gentle disease, "My house is yours." And in all these virtues—the homely, human, ancient and fundamental virtues —not an "American" community in America can make faces at the poorest Mexican hamlet or Indian pueblo in New Mexico.

In my day, one with a stutter of Spanish could travel, afoot or horseback, from Santa Fé to Panama, without a dollar or a name; sure of welcome alike at hovel or hacienda—and safer than in any American city. So Bandelier traveled, afoot, unarmed, alone, thousands of miles in our Southwest and Mexico. So have I, alone, afoot or horseback, like thousands—and never had rebuff from Indian or Mexican. I met this patriarchal hospitality in 1884, on my "Tramp Across the Continent," and noted it in my book of that name. Also, how one Phillips and I, lost in the snow, came by night to a tiny two-room adobe whose inmates—a 90-pound man and a 300-pound woman, both past 70—insisted on giving us their bed—and themselves slept on sheepskins on the adobe floor—and were keenly hurt at hint of pay. Phillips lay awake all night—"for fear them damned treacherous Greasers would cut our throats!" "Nigger" and "Dago" are vulgar enough; but "Greaser" is a base, indecent epithet —and undeserved

CHAPTER XXV

DOCTORING THE YEAR

A Weather Bureau from Prehistoric Times—Aboriginal Soothsayers Like Those of Old Greece and Rome—The Spring Forecast

UNCLE SAM'S Weather Bureau is beyond comparison the greatest and the most efficient in the world. We have little reverence for anything, and the weather man is a favorite butt for sneers and gibes. As a matter of fact, of course, this is one of the most useful arms of government. In times of peace no other agency does so much to save life and property. It was only a year before I was born that Professor Joseph Henry, secretary of the Smithsonian Institution, began to "take the weather by telegraph"; and it was not until 1870 that Congress really established the Weather Bureau.

But a thousand years before James Smithson, Englishman, gave to the Government of the United States what is still its most important scientific department—the Smithsonian Institution "for the Increase and Diffusion of Knowledge

Among Men''—the First Americans had their own weather men—and never made fun of them. And the aboriginal forecaster had another duty which fortunately is not laid upon his civilized successors. He must be not only a prophet, but a healer. If unfavorable symptoms were foreseen in coming weather, it was his business to apply the remedy in time.

With the Pueblo Indians the sick are not the only ones in need of doctoring. The medicine-men—those most important of Indian personages—have for patients not only sick people but well ones, and even the crops and the whole year's success. It would seem to a civilized physician a ridiculous thing to prescribe for the seasons and to feel the pulse of the corn-fields; but my aboriginal neighbors see no incongruity in it. On the contrary, they deem this professional treatment of inanimate things as essential as the care of the sick, and would have no hopes at all for the success of any year which was not duly provided for at the start by a most solemn dose of ''medicine.''

''Medicine'' to an Indian has not merely the restricted sense in which we use it. *Wahr* (the word among the Tiguas) means almost every influence of every sort that affects the human race. The Indian has no idea of blind chance or unin-

telligent forces. To him everything is sentient; every influence which is agreeable in its effects is a good spirit or the work of a good spirit; and every influence which harms him is, or comes from, an evil spirit. All these influences are "medicine"; and so also, in a secondary sense, are the material agencies used to invoke or check them. The medicine-men, therefore, are people with supposed supernatural powers, who use good influences (either visible remedies or spiritual means) to bring welfare to the people and avert evil from them. A medicine-man has also power over the bad influences; but if he were to use that power to harm people he would be said to "have the evil road," and would be regarded no longer as a medicine-man but as a witch—for the obligation to do good deeds only is doubly strong upon those who have powers not given to other men.

There are in a Pueblo village countless medicine-makings, little and great, general and special; but the two most important ones of the year are the spring medicine-making (or medicine-dance, as it is often called) to make the season prosperous, and the medicine-dance of thanksgiving to the good spirits, after the autumn crops are harvested.

The spring medicine-making, which is called in this language *Tu-shée-wim,* is held generally about the middle of March, when the mild winter

of the Rio Grande Valley is virtually done, and it is time to begin opening the great irrigating ditches and doing other spring work. Every smallest detail is conducted with the utmost secrecy; and, gentle as these people are, the safety of a stranger who should be caught spying upon any of these secrets would be very small indeed. It was only after I had ceased to be an "American" in the minds of these First Americans, after I had been with them many years and had been able to do them signal service, and had become "brother" and "son," that I learned the sacred rituals, some of which I feel free to sketch. But there are a thousand secrets which neither my vow to science nor my impulse as a writer will ever lead me to tell.

When it is felt to be time to forecast and propitiate the year, the first step in the matter is taken by the *Capitan á guerra* (captain of war), and his seven sub-captains. They come together at his house; and he sends out the sub-captains to notify all the different branches of medicine-men—of which there are many. Each order of medicine sends a delegate to the meeting, which proceeds to consider the best manner of taking the first formal step—the presentation of the sacred corn meal to the *Káh-ahm Ch'oóm-nin,* the two Heads of All Medicine. The matter is fully discussed, and is finally put to vote of the

meeting. As a rule the Captain of War is chosen for this most important mission, unless he chances to be ignorant of the necessary ceremonial songs, in which rare event one of the sub-captains is selected.

On the day after this meeting—which can be held only after sundown—the chosen war captain, with his associate next in rank, must perform the errand. During the day the wife, mother, or sister of the senior of them carefully selects the best ears from her store of corn, and in a dark room grinds a handful into meal, on the *metate* (stone hand-mill), all the time praying that the errand of the sacred meal may be successful.

After sundown the ambassador wraps this bit of meal carefully in a clean square of corn-husk, and ties the packet with a corn-husk string. With this in his right hand he walks gravely to the house of the Head of All Medicine. There are two of these dignitaries in this pueblo, one representing the Isleteños proper, and the other the Queres [1] colony here. They always begin as members of some special medicine order, but are promoted by degrees, until they leave their original orders altogether and become the two general and supreme heads of all the orders. To only one of

[1] Pronounced Káy-ress. Several families from Laguna moved down here about 1850 to escape a great drought.

these—the "Father of Here"—does the embassy go.

Entering the house, the bearer of the meal and his assistant sit down by the fire with the Father of Here, smoke the sacred cigarette to ward off evil spirits, and talk awhile on general matters. After a cigarette or two, the visitors rise and pray to the Trues on all sides to grant them success. The Father of Here of course knows all the time what is coming, but pretends not to hear them at all. Having finished their prayers, they turn to address him directly, telling him he is desired to make *Tu-shée-wim* ("medicine for all the village"), to see if the year will be good, and to drive away evil spirits. Then the senior captain hands him the packet of sacred meal, which is always proffered and taken with the right hand only. For either of them to use the left hand in this (or any other) ceremonial would be sure death! As long as the visitors remain, the Father of Here must hold the meal in his hand. After they are gone, he walks to the house of the Father of the Queres and shares it with him—unless it is already too late at night, in which case he does not go until after sundown the next day.

The morning after both the Heads of All Medicine have the sacred meal, they meet before sunrise at a point in the sand-hills east of the river. As the sun comes up over the Eagle Feather

Mountain, they pray to the Sun-father long and earnestly. Each now holds the sacred meal in his left hand, and each as he invokes some blessing on the people takes with his right hand a little pinch of the meal, breathes on it, and tosses it toward the sun, until the meal is all gone. They pray that the Trues will send abundant rain, make the crops large, give plenty of grass for the herds, send good health to the village, and so on. And when the meal has all been blown away, they return to the village and summon together their respective original medicine orders. With this morning begin the eight days of abstinence, purification, and preparation for the great event. Only the two special branches of medicine-men have to keep this ceremonial. The first four days are the "outside days," when the medicine-men may move about the pueblo and visit friends, but must keep their special fast. Then come the four "inside days," and with the beginning of these the medicine-men enter the medicine-house. There each is given a special seat, from which he must not move until the four days are over. In front of each stands a *tinaja* (jar) of water; and he may drink as much as he chooses, but must not touch a mouthful of food in all those days, nor must a ray of sunlight strike him. The Common Mother, *Kai-íd-deh,* the wife of the Head of All Medicine, is the only other soul who can enter that

solemn room; and she sweeps it, brings them water and tobacco for cigarettes, and a sacred coal to light them. Day and night the fasters sit and smoke, the older men rehearsing the traditions of the order for the benefit of the younger, who must learn all these stories by heart. During all this time no other person dare even call at the door. At about ten o'clock in the morning of the fourth inside day, any Americans or other strangers who may chance to be in town are sent out or shut up under a good-natured but inflexible sentinel. Then the coast is clear for the *Cum-pa-whít-la-wen.* Four pairs of these marshals are sent out, one pair to each cardinal point. In passing through the village they wear blankets, but, once outside, they cast these off and go running swiftly, clad only in their moccasins and the breech-clout. Besides their inseparable bows and arrows—the insignia of their office—each pair of guards carries a single "prayer-stick" which has been made that morning by the Head of All Medicine. This prayer-stick is a bit of wood about the size of a lead-pencil, with certain magical feathers bound to it in a certain way, varying according to the object to be prayed for.

The guards carry these prayer-sticks a long distance, plant them upright in some lonely and sheltered spot, east, north, west, and south of the village, pray over them, and then set out on a

long, wild run across country. At last they return to town across the fields and gardens (for these Indians are most industrious farmers), "blowing away the witches." Each guard carries a long feather in each hand, and as he runs homeward he is continually crossing these and snapping one over the other—which is supposed to toss up all evil spirits so that the winds will bear them away.

The medicine-making (or "dance") begins about eight o'clock that evening in the room where the fasters have kept their inside days. Before the doors are opened, the medicine-men remove their ordinary garments—for medicine-making must be done with only the dark-blue breech-clout —and paint their faces with *yeso* (a dingy white-wash made from gypsum) and *almagre* (a red mineral paint). The Father of All Medicine is marked with the *yeso* print of a bare hand on the outside of each thigh, and on the chest; and the two medicine-men who are to be the first performers—always the two who have last been received into the order—are indicated by *yeso* lightnings on their legs, as a symbol that they are the forerunners.

When the door is opened, the people outside remove their moccasins and stand motionless. The medicine-men sing, and the Father of All Medicine goes out to the public. Then he chooses

the principal man of them all—always the Cacique if that functionary is present—turns his back to him, and puts the tips of the eagle-feathers he carries back over his own shoulders. The Cacique takes these tips in his hands, and is thus led into the room, followed in single file by the people. He is given the seat of honor nearest the medicine-men; and the general public seats itself at will outside a line which has been drawn on the adobe floor about ten feet in front of the medicine-men, sitting only on moccasins and blankets. The Shamans are seated in a semicircle, facing the public. The Father of All Medicine sits in the center, and the rest are ranged on either side of him in the order of their rank, so that the two men at the ends of the semicircle are the newest in the order. In front of each medicine-man is the sacred "Mother," the chief implement of all medicine-branches—a flawless ear of white corn, with a tuft of downy feathers at the top, and turquoise ornaments.[1] And in front of the Father of All Medicine is the *cajete* (earthen bowl) of sacred water, in whose clear bosom he can see all that is going on in the world!

When the public is seated, the medicine-men sing a sacred song to make the people center their thoughts on nothing but the matter in hand. The English of this song would be about as follows:

[1] The emblem of the soul.

Now bring the corn, our Mother,
And all the common corn;
In all our thoughts and words
Let us do only good;
In all our acts and words
Let us be all as one.

While this song is being sung over several times, the two youngest medicine-men rise from their seats on the floor, and step to where a bowl of sacred corn meal stands before the Father of All Medicine. Here they stand and pray, at each request picking up a pinch of the meal and blowing part of it toward the Father of All Medicine and part toward the Mother-corn. Then they go down the aisle, which is kept open, to the door, crossing and snapping their eagle-feathers to toss up and blow away any evil thought that may be in the crowd. By the time they return to the open space the song is ended, and another is begun; and now the next youngest pair of medicine-men rise and join the first, going through the same performance. This is kept up till nearly all the medicine-men are on their feet together. Then begins the wonderful sleight of hand, which is the most startling feature of all, and the one which maintains the superstitious power of the Shamans over their people. It is described in another chapter. This conjuring, which is the "medicine-dance" proper, continues through five songs. Then the per-

formers take their seats for a rest, and smoke cigarettes which the *Cum-pa-whít-la-wen* roll for them, and presently rise to resume their magic.

When this medicine-making is done—which is only when all present are cured of all their real or imaginary diseases—comes the equally important *Ta-win-koór-shahn-meé-ee,* the sacred "going-out-for-the-year." The Father of All Medicine rises, with the two next in rank, and dances awhile. Then he puts on his left hand and arm a great glove of the skin of a bear's fore leg, with the claws on; and upon each foot a similar boot from the bear's hind leg. In the glove he sticks his eagle-feathers; but his two assistants, who do not have the bear-trappings, carry their feathers in their hands. While these three Shamans stand in a row before the assemblage, the others sing for them a special song:

Ai-ay, ai-ay, hyah ay-ah
Ay-ah, ay-ah, ay-ah!

After the Sun-father
We will follow, follow, follow!

When this song is sung a second time, the Father of All Medicine goes behind his two assistants and looks in the sacred *cajete,* to find if it be time to go out. Seeing that it is, he starts on a half-run to the door, followed by the two others. There are always two *Cum-pa-whít-la-wen* at the

door, and one of these accompanies the three Shamans. They go to a certain point on the bank of the Rio Grande, and there receive the omens which they declare the river brings down to them from its source in the home of the Trues in the North. Among these tokens are always bunches of green blades of corn and wheat—many weeks before a spear of either cereal is growing out-of-doors within hundreds of miles of here. One year, I noted, "the river brought them" also a live rabbit—which is much more easily accounted for—as a sign that it would be a good year for game.

Returning with these articles, they enter the medicine-house, and show them to the whole assemblage. If the leaves are green and lusty, it will be a good year for crops; but if they are yellow, there will be a drought. Then the three "goers-out" lay the articles before their medicine-seats and sit down for a rest.

Then the medicine-making song is resumed, and the conjuring begins again, and is kept up almost all night.

After a possible witch-chase (described in another chapter) comes the sacred water-giving. The two youngest Shamans take the *cajetes* and carry them before the crowd. To each person they give a mouthful, praying the Trues to give him a clean heart, strength, and health. The re-

cipient does not swallow all the water, but blows a little on his hands and rubs it upon his body, believing that it will give him strength.

After all have had the sacred water, the next ceremony is the *Ka-keé-roon,* the "Mother-shaking." The Father of All Medicine takes up all the (corn) "Mothers," two at a time and shakes them over the heads of the seated audience, raining a shower of seeds. The people eagerly scramble for these seeds, for it is firmly believed that he who puts even one of them with his spring planting will secure a very large crop.

All the audience who desire now go in front of the semicircle of seated medicine-men and pray, scattering the sacred corn meal on the row of "Mothers." Then all sing a long song, of which the verse has the following meaning:

Now! Now!
Our Mother, corn Mother!
Her sun is coming up!
Our Mother, corn Mother!
Her sun is arriving!
Our Mother, corn Mother!
Her sun is entering!
She is the one who
Gives us the road.
She is the one who
Makes the road.
She is the one who
Points the road to us!

Acoma

Zuñi

MODERN PUEBLO TINAJAS (OF 50 YEARS AGO)

This song is a sort of benediction, and is sung standing. It is begun when the morning sun is really coming up behind the mountains, and the Father of All Medicine can no longer delay to "give them the road"; that is, dismiss the meeting. He rises and prays to the Trues to bless all present and those who were unable to attend, and to crown the year with success to all. Then he says, "A road is given you," and the people all file out, and when once outside put on their moccasins and hurry home.

After they are gone, all the women bring to the door offerings of food, which are set before the medicine-men by the Common Mother, and they eat heartily after their long and trying fast. What is left is divided among them to be taken home. Having eaten and smoked, the medicine-men wash off the ceremonial paint, resume their ordinary clothing, close the medicine-house, and return to their homes. That is the end of the *Tu-shée-wim,* and the year is now supposed to be safely started toward a successful issue—which will largely depend, however, upon later and special medicine-makings for special occasions and emergencies.

How benighted this all sounds to us of the Superior Race! Still—*we* pray for rain.

CHAPTER XXVI

THE DANCE OF THE SACRED BARK

Why the Indian Took a Scalp—With the Hair He also Acquired the Valor of its Owner—Ceremonies of the "Bark"

I NEED not be a mind-reader to say that you would hardly look for refinements of language among Indians; but there again you would be wrong, as we are in most of our notions about the First Americans. The languages of these old peoples, who dwelt with Nature observantly, are extraordinarily rich in metaphor and simile. They employ euphemisms very largely, and invent pleasant phrases for unpleasant things. One of the best examples of this is the manner in which they speak of one of their most savage customs. They hardly ever talk of scalps or scalping; instead of those harsh words they have very innocent paraphrases. Among my Tigua neighbors this ghastly trophy is spoken of as "the sacred hair," or "the oak-bark," or "the sacred bark"—all very natural Indian metaphors. An important folk-story of Isleta relates how two

boys who smoked before they had proved themselves men were reproved by their grandfather, a wise old medicine-man. He told them that before they could be allowed to smoke they must go to the Eagle Feather Mountain (the Manzano Range) and bring him some of the "bark of the oak." The youths went out in all innocence and peeled the bark from several trees, and were greatly chagrined when their grandfather sternly told them to go and try again. At last a wise mole solved the riddle for them, and directed them against a band of marauding Navajos, from whose heads the boys got the "bark" which entitled them thereafter to the privilege of smoking.

It is a good many years since my kindly "friends and fellow-citizens" of the pueblo of Isleta have taken a scalp, and they were never universal snatchers of "the sacred hair." All their traditions assure me that they never did have the habit of scalping Americans, Mexicans, or Pueblo Indians—no Christians, in fact—but only the heathen savages who surrounded them, and for so many bloody centuries harassed and murdered ceaselessly these quiet village people. Moreover, it has always been against their rule to scalp women of even these barbarous foes.

About sixty years must have gone by since the last scalps were brought to Isleta. One of them came at the belt of my pleasant next-door neigh-

bor, Bartolo Jojola. He is one of the official Delight-makers, or *Kó-sha-re,* and fully competent to hold his own with any civilized clown of the ring. A band of Comanches from over the mountains to the east came silently into the pueblo one stormy midnight to steal what stock they might. A lot of horses were in a strong corral of palisades, whose tops were bound with iron-like ropes of rawhide. One Comanche climbed quietly into the inclosure, with the end of a braided rawhide lasso in his hand. He at that end, and a companion outside, sawed the rope back and forth until the rawhide lashings were cut. Then several posts were uprooted, the horses were led out, and off went the robbers and their booty without arousing any one. But at daybreak—for my friends are very early risers—the alarm was given. A posse was organized and followed the robbers across the Rio Grande, across the twenty-mile plateau east of us, and over the ten-thousand-foot Manzano mountains. At last they overtook the raiders on the edge of the great plains, and there was a fierce fight. The Comanches, who were, as a tribe, the best horsemen America has ever seen, resorted to their favorite tactics of savage and repeated cavalry charges. The Isleteños, though admirable riders, were no match on horseback for these centaurs of the plains, and so they dismounted and received the charge on foot. So effective was the

fire of their flintlocks that the Comanches took to flight. The Isleteños recovered the stolen horses, besides capturing many new ones and a dozen scalps.

Since then there have been none of these ghastly trophies brought to Isleta; and yet the scalp plays an important part in the ceremonials of the village, and in a secret niche in the wall of the dark, round estufa rests a priceless horde of the sacred "barks," which are still taken out and danced over at their due season.

The Indian did not take a scalp through cruelty, but just as civilized soldiers fight for and preserve the battle-flags of the enemy, as trophies and proofs of prowess in war. Not being refined enough to see the barbarity of taking a physical trophy, he did very much what civilized nations did not many centuries ago, when ghastly heads on pikes were no uncommon sight; and he took it chiefly because he believed that with it the valor and skill of the former possessor became his own.

A scalp is taken by making a rough circle of slashes around the skull, and then tearing off the broad patch of skin and hair by main force. It is a very dreadful operation, never to be forgotten by those who have once seen it. The trophy must be cured by him who took it, which he proceeds to do with the utmost care. Many magical powers are supposed to reside in the scalp. Even a third

party who touches it, by accident or design, becomes possessed of some of its virtues, though he is thereby also forced to certain temporary self-denials.

When a war-party returns to the pueblo with scalps it is a very serious matter. They cannot enter the town, nor can their anxious families come out to meet them. If they have been westward after the Apaches, Navajos, or Utes, they make a solemn halt on the center of the Hill of the Wind, a volcanic peak twelve miles west of here; and if to the east after Comanches, they stop at a corresponding point on their return on the east side of the Rio Grande. There they camp with the scalps, and send one half of their number forward to the pueblo, where they dare not go to their homes, but repair at once to the Cacique, and make their report to him. For fourteen days the half who are out on the hills keep their camp, sending out scouts daily to the lookouts in the lava peaks to guard against the approach of an enemy; and the half who have come to town are secluded in the estufa, fasting and forbidden any intercourse with their families. At the end of this two weeks the warriors who have been shut up in the estufa march out and relieve their companions in camp, staying there with the scalps while the others come in to fast in the estufa. After fourteen days more the men in camp start toward

town, those from the estufa meet them half-way, and all enter the pueblo singing "man-songs" (songs of war), and carry the scalps first to the Cacique and then to the estufa.

Then begins another period of fasting and self-purification—twelve days for those who have touched a scalp in any way, and eight days for those who have not. Every act is regulated with the most minute and scrupulous care. The estufa is always surrounded with the utmost sacredness, and its etiquette is more punctilious than anything we know. The estufa is a building by itself, round and low, with a diameter of from forty to fifty feet. It has no doors in the sides, but is reached by a ladder from ground to roof, and from the roof by another ladder down through a trap-door to the interior. The interior of the estufa is a plain, circular room, with walls bare, save for a few antlers and rude paintings of the sacred animals. One must not forget himself in entering the estufa. Reaching the roof, he must approach the trap-door from the west side, back down the ladder, turn to his right when at the bottom, and make a complete circuit of the room, a foot from the wall, ere he takes his seat in the semicircle around the sacred fire. If he were thoughtlessly to turn to the left in any of these manœuvers, it would be sure death; for the Trues would let loose on him the ghost of the scalped

man, who, clad only in a dark blue breech-clout and with a lasso coiled over his shoulder, would chase and touch him, whereupon he would fall dead! When they come to leave the estufa they approach the foot of the ladder from the left, and on reaching the roof turn to the right, walk around the roof, and finally descend to the ground backward, in hard-earned safety.

The seat of the Cacique is at the west side of the fireplace; that of his first assistant opposite him on the east, and the acolytes fill the semicircle between. In a semicircle around these are the *Cum-pa-whít-la-wen,* who are guards of the estufa; and in successive semicircles come all the rest of the audience. All face away from the fire until the Cacique rises and speaks, when all face toward it, and so remain through the rest of the session. This sacred fire is made only by the *Hoó-mah-koon,* and must be started only with the sacred fire-drill or flint and steel. Most of the men present smoke, but never use matches. Their cigarettes must be lighted only at the sacred fire.

After the days of preparation in this punctilious spot, the scalp-takers and other warriors emerge to hold the *T'u-a-fú-ar,* or "mad dance," in commemoration of their victory. The dance—which is never allowed to be witnessed by strangers—is held in a small square near the estufa.

The dancers are formed in two lines, facing each other, with alternate men and women. The men are in their war-paint, and each carries a bow and arrow in his left hand, and in his right a single arrow with the point upward. The women wear their gayest dresses and silver ornaments, but carry nothing in their hands. All the dancers move in perfect rhythm to the monotonous chant of the singers and the thump, thump of the big aboriginal drum. The chant is a metrical account of the battle and the manner in which the scalps were taken.

As soon as the dance is fairly under way, the "Bending Woman" makes her appearance. She is the official custodian of the scalps; has taken them from their sealed hiding-place in the estufa, and brushed them carefully with a sacred broom made in the mountains; and now carries them in a buckskin on her back, bending forward under the weight of—their importance. As the dancers perform their evolutions she walks slowly and solemnly up and down between their lines with her precious burden.

This mad dance lasts four entire days. About seven o'clock on the evening of the last day comes *Khur-shú-ar,* the concluding round dance. A big bonfire is lighted, and the two parallel lines of dancers deploy around it until they form a large circle, the principal singers dropping out of the

ranks and clustering around the drummer beside the fire.

The song of the round dance is one of the prettiest of all sung by the Pueblos. It really is melodious and "catching." At the end of every phrase the effect is heightened by a chorus of high yells, in imitation of the war-whoop or "enemy-yell." Some of the older dancers, to whom the ceremony recalls real memories of their own, add doleful wails like those of the wounded. The whole performance is weird, but not savage-seeming. It has become merely a ritual—not a rehearsal of ferocity.

The chant and the dancing are kept up all night, until sunrise ends the celebration. All then repair to the estufa; the Bending Woman puts the scalps back in their niche, covers it with a flat slab of stone, and seals it over with mud.

The chief of the *Cum-pa-whít-la-wen,* after a solemn silence, says "Brothers, friends, a road is given you" (that is, "you are free to depart"), and all file out, free to break their long abstinence and enjoy themselves until the war-captain shall again summon them to the field.

Now that no fresh scalps have been acquired for so long, the old ones are still brought forth at a fixed time, and do duty, as the inspiration of the *T'u-a-fú-ar.* This dance, however, like many of the other old customs, is not so well kept up in

Isleta as in some of the more remote pueblos which have not been so much affected by civilization. The *T'u-a-fú-ar* which I witnessed here in the autumn of 1891 was the first the Isleteños had had in four years, though it should be held yearly. There was another in 1892; and they are still held, occasionally.

Most "progressive" of the pueblos. Isleta has also largely outgrown the strange Kó-sha-re, or Delight Makers, who gave name to Bandelier's diagrammatic novel of prehistoric Pueblo life; but they are still active in other pueblos—notably Cochití, Santo Domingo and Zuñi. Only shallow writers call the Kó-sha-re "people whose sole duty as religionists is to make people laugh by their clownish acts." Clowns they are, and most clever ones; but essentially they are religious officials of grave and sacred responsibilities—among them, to insure fertility in crop and home. Some of their rites are objectionable to us, though in devout faith. I barely averted a massacre, over 30 years ago, in Santo Domingo, stiffest-necked of the pueblos in clinging to the "Ways of the Old." A giant Easterner was jumping to kill a Delight Maker for insulting his wife. I luckily convinced the enraged man of the real significance. Had he killed that sacred person, the score of uninvited "American" intruders at this ceremonial would have been wiped out.

CHAPTER XXVII

THE PRAYING SMOKE

The Pipe of Peace and the Sacred Cigarette—The Ancient Ceremonial "Weer" of the Southwest—Rain-maker and Witch-blinder

SOME time, too, I am going to write a book about the Wedded Weed—that wonderful leaf for which the swashbuckling Sir Walter Raleigh receives theatrical credit, but in whose real romance he cuts very little figure. The use of "ecstatic" plants of various sorts is as old and as wide-spread as humanity; but among them all, the American plant tobacco is undisputed king. But this is not the place for that joyful excursion into history and legend and the tribes of unknown men. I wish to speak here simply of the "praying smoke" in the Wonderland of our own Southwest.

The use of the pipe of peace by the Indians of the East, who have disappeared before the elbowing of our ancestors the earth-hungry, is familiar to every reader; but few are aware how widespread is still the importance of smoking among the surviving tribes of the continent. In the

Southwest, where the Indian has held his own since the more merciful Spanish conquest—for scientific history in these later days proves the Spaniards were not merciless exterminators; they saved the Indians, and educated them; and there are as many Indians in Spanish America to-day as there were four hundred years ago, and incomparably better off—the calumet had never any real place, though stone pipes have been found here. The cigarette is the official form of the weed, and its importance is surprising. In religion, in war, in the chase, and in society it occupies a highly responsible position. It is more to the Indian than is salt to the Arab—its equal as a hospitable bond, and extending to countless other uses to which the Arabian salt is never promoted.

I should not wish to be understood as saying these things of the abominable little white cylinders familiar to the East. Neither Indian nor Mexican has quite fallen to those. The *cigarro* of the Southwest is not a pestilence. Its component parts are a pinch of granulated tobacco, a bit of sweet-corn husk, or (specially made) brown paper, and a twist of the wrist.

In my studies in New Mexico I became much interested in the Sacred Smoke. It recurs everywhere. There is hardly a folk-story among the Pueblo Indians in which it does not figure. Not a prayer is offered nor a ceremonial conducted

without its aid. But for it the land would be burned up with drought, and the population harpied away bodily by evil spirits. No one thinks of being born or dying without the intervention of the cigarette, and to all the intermediate phases of life it is equally indispensable. And, as befits so vital an article of faith, it is surrounded by rigid restrictions. Thus much is common also to the Mexican population. A Mexican boy would as soon think of putting his hand in the fire as of smoking before his parents, if he dared smoke at all—which is very seldom. Many a time on a weary march I have offered the bit of corn-husk and the pinch of tobacco to an old man, who accepted gratefully, and another to his grown-up son, who politely but firmly declined, though I could see he was dying for a smoke; and he would deny himself till night, when he could sneak off up the cañon with the precious luxuries, and grunt with joy as he puffed away in loneliness and gloom. And many a time I have seen a full-grown man, with mature children of his own, burn his fingers in hastily pinching out his cigarette at the unexpected approach of his aged father or mother. Mexican women may smoke after their marriage, but of course with the same restriction.

With the Indians the lines are more closely drawn. A woman is not to think of smoking. I have known a case where an Indian girl, who had

learned this and other bad habits from the "superior race," was caught by her parents with a cigarette in her mouth; and her tongue was slit at the tip as a warning against such unladylike tricks. The Pueblo lad dare not smoke even by himself before he is twenty-five years old, unless he has established his warlike prowess by taking a scalp,[1] or has been given "the freedom of the smoke" upon acquiring full membership in one of the branches of medicine-men, like Refugio. And even then he must not smoke in presence of his parents or any one who is his senior without their direct permission, which is very seldom given.

In all Pueblo dealings with their brethren and other Indians the cigarette is a flag of truce, a covenant, a bond whose sanctity was never violated. When a Pueblo meets any heathen Indian —for all Pueblos rank themselves as Christians— his first act is to toss him the little *guaje* of tobacco with a corn-husk. He never hands it. If the stranger pick up the offering, there is unbreakable peace between them, and they sit down and smoke the sacred smoke in amity, though their respective people may be at war. If an Indian went out to slay his bitterest foe and in a thoughtless moment accepted a cigarette from him, he would have to forego the coveted scalp.

[1] Of course it is now a great while since they have earned the privilege thus.

It was only after many years that I was able to settle the mooted question whether the Indians of the Southwest smoked before the Spaniards came, 350 years ago, for these Indians did not have tobacco until after the conquest. This late but conclusive evidence establishes the fact that they did smoke. The ancient substitutes for tobacco were two herbs known in Tigua as *ku-a-rée* and *p'ee-én-hleh*. They are much more aromatic than tobacco, but do not, as the Indians observe, "make drunk so much" as our weed. I never could get green specimens of the plants for classification. The dried leaves are brought great distances from certain spots in the mountains; and the dried plants I sent the Department of Agriculture were never satisfactorily identified.

In the primitive cigarette, which the Tiguans call *weer,* no paper was used, of course, for this country was then innocent of paper; nor were corn-husks. The *weer* was made by punching out the pith of a reed common in the Rio Grande Valley, and ramming the hollow full of *p'ee-én-hleh* or *ku-a-rée.* All ceremonial cigarettes are so made still; for the brown paper or *oja* smoke is "not good" for religious matters. The reed, however, may be filled with tobacco instead of the older weeds and still be efficacious.

Himself an altogether matchless observer, the Indian is equally adept at eluding observation.

Photo by the Author

PUEBLO WOMAN FIRING POTTERY

Bundle of *bois de vache* in foreground

If he has a secret duty to perform when you are around, he will do it before your very face with such *sang-froid* and such wizardly sleight of hand that you will never dream what he is doing, or that he is doing anything out of the ordinary. I had watched the sacred smoke-prayer ten thousand times without the remotest suspicion of it, and my observation was neither indifferent nor without the sharpening which association with Indians must give the dullest senses. It was only after a hint, and when I came one day to see—myself unseen—an old Indian lighting his cigarette, and observed that each of the first six puffs was sent in a different direction, that I began to suspect a ceremony and to watch for further proof. Then I saw that every smoker did the same thing, though, when in company, with an infinite precaution which made it almost imperceptible. The world is full of evil spirits—nothing else is so ever-present in the Indian mind as the fear of witches—and these must be propitiated as well as the Trues. This cardinal smoking at the outset of the cigarette is both an offering to the Trues and an exorcism of witches.

It is the collective smoke of the sacred *weer* that forms the rain-clouds and brings the rain. Tobacco smoke has not this virtue. In the spring medicine-making, when the year is to be foretold, and at any special medicine-making that may be

had to stave off a threatened drought, the whole *junta* industriously smokes *weer,* to help with its cloud-compelling vapor in the answer of their own prayers for rain. Not many years ago smart American farmers paid tens of thousands of dollars to one Hatfield to "make rain" as scientifically. Since in the preparation for one of these ceremonials the medicine-men have to shut themselves up in the medicine-house for from four to eight days—never going out, nor eating, nor moving from their appointed seats, and with no relief save drinking water and smoking—their united efforts in that time make a cloud surely sufficient in volume, whatever may be its capacities for precipitation!

I have already told you of the "drawing-dance" before every hunt wherein the *weer* is smoked to blind the eyes of the game; and that in the hunt itself a steady smoking is kept up by the Shamans of the chase for the same purpose. The *weer* also figures in all medicine-makings, to dispel witches and for other purposes. In looking into the magic *cajete,* the Father of All Medicine stoops and blows the sacred smoke slowly across the water in that important bowl, and it is then that he can see in that curious mirror (so he says) all that is going on in the world. The manner in which the film of vapor hovers upon the water or curls up from it in hasty spirals indicates whether the year

will be calm or windy. This smoke mirror is also particularly used in the detection of witches, whom it reveals in their evil tricks, however hidden.

When one is sick, the male head of the family wraps a few pinches of tobacco in a corn-husk, ties the packet with a corn-husk string, and with this offering goes to the medicine-man and requests him to come and cure the invalid. And it is a sovereign fee—a Shaman whose services you cannot hire by whatsoever present of money or valuables cannot refuse your request if you come to him with an offering of the weed. This certainly indicates a freedom from avarice which the professional men of more civilized races do not always imitate, for the Indian is as fond of his family as are any of us, and would pay his last pony and last silver necklace for the curing of his sick if it were demanded. Indeed, the whole Shaman code of ethics is a very creditable one.

The ceremonial *weer* dare not be lighted with a match or at a common blaze It can be lighted only from the sacred fire in the *estufa,* a coal from the Cacique's hearth, a flint and steel, or the ancient fire-drill, which is here a dry, round stick fitting tightly into a cavity in the side of another, and revolved rapidly from right to left (even in so trivial a matter as this the wrong order must be avoided) until the hollow is sufficiently hot to

ignite the primitive tinder under a coaxing breath. Very old men who are True Believers still dislike to light even their pleasure cigarettes in the suspicious modern ways, and will, if possible, pluck a coal in their skinny fingers to start the precious smoke.

When a person dies here, the medicine-men, who come to insure the safety of the departed on his four days' journey to the other world, perform very intricate and mysterious rites, very largely designed to hide his trail from the evil spirits, who would otherwise be sure to follow and harass him, and would very likely succeed in switching him off altogether from the happy land and into "the place where devils are." Among other things, the body is surrounded during these four days with the tracks of the road-runner [1] to lead the witches on a false trail, and the sacred smoke is continuously blown about that they may not see which way the departed went.

Superstition? Truly—yet as loving and as devout as any funeral ceremonies of ours. And though they bury as Christians, and in consecrated ground, they do not mortgage the home nor saddle the family with years of debt for a Crœsus casket to be admired a day, and a marble monument of doubtful art.

[1] A small pheasant.

CHAPTER XXVIII

"FINISHING" AN INDIAN BOY

The Little Old Red School-house and the Three R's as a Pueblo Lad Knew Them— An Endless College Course

THE class of 1881 at Harvard was the largest that had ever entered that venerable institution—our oldest, though three universities in Spanish America were nearing their century mark when Harvard was founded in 1630. My class numbered 272 men, some of whom became famous in later years—like Boies Penrose, long United States senator from Pennsylvania; Curtis Guild, a governor of Massachusetts; Charles T. Dazey, the playwright; Howard Elliott, railway president; William Roscoe Thayer, writer and historian; two presidents of the American Institute of Architects, C. A. Coolidge and R. C. Sturgis; Sir Henry Norman, and so on. It was a noble faculty we had: "Scar-face Charlie," the great C. W. Eliot, who ranks in the East with David Starr Jordan in the West, the two greatest educators in American history; Charles Eliot Norton,

who made Ruskin known to this country; John Williams White, who made Greek a living thing, and Nathaniel S. Shaler, who "brought the stones to life" in geology; and many more. It was a fine atmosphere; and my four years of it, making my way through by tutoring and by printing my little "Birch Bark Poems," taught me many things.

But really the first four years after I left Harvard taught me much more of the things that have been truly useful to me in life, and among them an absolutely new conception of what education really is. What it is, and should be—and not what we actually mean when we talk of it, for nine times out of ten when we speak of education (which is "drawing out" that which is within the mind) we mean instruction, which is only "building up" in the mind all sorts of lumber, of which some may be useful. We all of us know people whose mental yards are stacked high with all sorts of learned lumber, but who cannot get out enough boards to make a chicken-coop!

I learned in the Southwest that there is among all Indian tribes a far more thorough course of home teaching than we generally imagine. For that matter, there is nothing to compare with it in our own homes, for the instruction of our youth is entrusted to our marvelous system of public schools. In the old New England days of which I am a product, the home teaching was a notable

institution; but, even at that, it did not rival the thoroughness, the extent, or the duration of the Indian home training; and even the Puritan home was never marked by deeper reverence. Any observant man, if he be half as intelligent as the average Indian, cannot watch the latter without feeling that this brown fellow has a remarkable scholarship of the senses. The education of eye and ear, and of the perceptive faculties, is nothing short of marvelous to us who have not left of any of these senses a tithe of the acuteness nature meant us to have. But if the observer can get "on the inside of things" and really understand Indian life, he finds a much more remarkable education in the strange lore of a strange people. Such memories are hardly ever found among "civilized" people as are common to those who have no books nor writing to remember for them; and it takes such marvelous memories to retain all that the member of an Indian society must carry in his head. I have found the study of the training of my young Pueblo neighbors very interesting.

The girls are taught little beyond their duties as home-makers and home-keepers, which is a considerable education in itself, for the Pueblo woman is a thorough and accomplished housewife. But the boys all go through a very serious and arduous training to fit them for the responsibili-

ties of Indian manhood. Every lad is expected to become an athlete of agility and endurance, to be expert in war and the hunt, to know and keep, word for word, the endless stories which embody the customs and laws of his people, and to be educated in many other ways. His training begins as soon as he can talk and be talked to; and it continues, in greater or less degree, as long as he lives. As for the lad who is elected to follow the unattractive life of a medicine-man, he has before him one long curriculum of toil. In all Indian tribes the Shamans or medicine-men are the most important personages—the real "power behind the throne" no matter what the outward form of government. Upon them depends the success of the farmer, the hunter, the warrior; they have to keep witches from swooping off the people, to give proper welcome to new-comers to this world, to cure the sick, and give safeguard to the departed on their long journey to the Other Country. Besides the extremely numerous societies of medicine-men, there are many other secret orders among the Pueblos; and initiation into one or more of these is part of the education of the young Indian boy.

Years ago a bright young neighbor and warm friend of mine, then twelve years old, was received into the important order of the *Cum-pa-whít-la-*

wen—who are a sort of police against witches, and armed guards to the Fathers of Medicine—and I was "on the inside." In his infancy Refugio had been sickly; and to induce the Trues to spare his life his parents had "given" him to the gray-headed chief of the *Cum-pa-whít-la-wen.* This old Shaman thus became Refugio's "medicine-father" and used to visit him regularly, for the boy continued to live with his real parents. This giving for adoption into an order or into another clan is common among the Pueblos. It does not at all break up the home ties, but merely gives the boy an extra father, as it were. The first day after the adoption, the old Shaman came in person, inquired as to the boy's health, held him awhile in his arms, prayed for him, and went away. Next day the second in authority of the *Cum-pa-whít-la-wen* called and did likewise; the third day, the third in rank; and so on, until every member of the order had made his ceremonial visit. Then the chief Shaman began again; and after him day by day came his medicine-brothers in the order of their rank. These formal visits had been kept up daily, through all these years, with absolute punctuality, until Refugio was deemed old enough to become a full member of the lodge into which he had been adopted. All this time, of course, he had been under the general

tuition of the order; and his "brothers" had given him a general education, but had not intrusted him with their special secrets

When at last his initiation was decided upon, he was made to keep a solemn fast for twenty-four hours. Then, after sundown, he was led by his medicine-father to the medicine-house, where the whole order of *Cum-pa-whít-la-wen* were already assembled.

Removing their moccasins at the door, the old chief and the lad entered the low, dark room—lighted only by the sacred fire, whose flickering embers flung ghostly shadows across the dark rafters—and stood before the solemn semicircle of squatting men. Standing there with bowed head, the medicine-father prayed to the Trues of the East, the Trues of the North, the Trues of the West, the Trues of the South, the Trues Above and the Trues Here-in-the-Center. So punctilious is Pueblo superstition that it would be deemed an infamy to address their six cardinal points in any other order. Only a witch would ever think of naming first North, then West, South, etc. Having thus invoked the blessing of all the deities, the old man took the trembling lad by the hand and said to his fellows: "Brothers, friends, this is my son. From now, he is to take our road. Receive him, and teach him in the ways of the *Cum-pa-whít-la-wen.*"

"It is well," replied the others. "*Ah-hlaí!* Sit down on what ye have."

The old man and Refugio placed their moccasins and shoulder-blankets upon the bare adobe floor, and seated themselves thereon. It would be an unheard-of sacrilege for an Indian to occupy a chair or bench upon any such sacred occasion. He must sit only "upon what he has," and if it be summer, when no blanket is worn, his moccasins are his only seat.

Then the chief Shaman's first assistant—had the boy been adopted by any of the others, the chief himself would have officiated now—prepared and handed them the *weer,* or sacred cigarette. The ordinary cigarette of tobacco rolled in a bit of corn-husk or brown paper, which is commonly smoked for pleasure, is never used in a religious ceremony. The *weer* can be lighted only at the sacred fire; and, having kindled his at the coals, Refugio began to puff slowly, as he had been directed. This smoke-trying is always the first duty of a candidate, and it is no mean test of the earnestness of his desire to "take the road." He must smoke the "*weer*" down to its last whiff and inhale every particle of smoke, not a suspicion of which must escape from his mouth. The first three or four whiffs almost invariably make him deathly sick, but it is very rarely indeed that he fails to smoke to the end. In almost all folk-

stories wherein the hero goes into the presence of the Trues for any assistance—a very common part of the plot of these myths—he is tried with the *weer* first, to see if he be enough of a man for it to be worth the while of the Trues to attend to his case. Sometimes the trial of his faith is long-drawn and harrowing in its severity, but it always begins with the smoke-test.

Refugio did bravely. Very soon the soft olive of his young face turned gray; but he puffed away impassively at the pungent reed until he had finished the last whiff.

"*Ah-t'it mée-hee!* He wins his course!" said the first assistant Shaman. Then, with prayers by all, the cleansing with warm water was given Refugio, and he was bidden to stand erect, while the master of ceremonies said encouragingly: "So far, you show that you will follow our road."

Standing now, the lad was ordered to make a prayer to all the Trues—no small task, since their number is legion, and they must be addressed only in the proper order of their rank. Whenever Refugio stumbled or was at a loss, the first assistant prompted him; and he had to go over and over that enormous list until he knew it perfectly.

Now he was made to sit down upon his moccasins, with his knees drawn up under his chin, to learn the songs of the order—which are of great number. He began with the great song to T'hoo-

rée-deh, the Sun-father—which he learned in less than half the time it afterward took me to master it. It is a very important and impressive song, and is sung by the *Cum-pa-whít-la-wen* whenever they escort the Cacique to a great ceremony. A translation of it is as follows (leaving out the many repetitions and meaningless refrains):

THE SONG OF THE SUN

O Sun, our Father,
Sun-man,
Sun-commander,
Father, a prayer-stick we tie.

Father, on the road stand ready;
Father, take your way;
Father, arrive;
Father, come in;
Father, be seated.

The learning of all those songs was a serious matter, and Refugio mastered only a few that night. The next day at sundown—after another fast—he resumed his labors. And so on every night, for many months, until he had all the songs by heart. After the last one was learned came the ceremony of *Tho-a-shúr,* the receiving. The boy stood with bowed head in the center of the room, while the master of ceremonies gave him the ceremonial embrace—putting his right arm over

Refugio's left shoulder, and his left arm under Refugio's right—and prayed that all the Trues would bless the new *Cum-pa-whít-la-wíd-deh.* Then Refugio was embraced in turn by his medicine-father and all the other members, and was given to drink of *P'ah-cuin-p'ah,* the sacred water, —a secret mixture which has a sweet smell but no taste.

Now came the last severe test of Refugio's faith. He was seated, no longer in front of, but in, the semicircle of *Cum-pa-whít-la-wen,* who sat solemnly with their official bows and arrows in their hands. For all secular purposes the Indians now use the latest and best firearms, but only bows and arrows can be admitted to religious ceremonials. The oldest member of the lodge began to recite the history and customs of the *Cum-pa-whít-la-wen,* from the very beginning, when mankind came out from the Black Lake of Tears, down to the present day. For forty-nine hours this recital was continued without rest, the elder Shamans taking turns in telling; and all that weary time the boy had to keep awake and intent, answering at the proper points "*Tab-koon-nám;* is that so?" Once, when he nodded, the nearest man gave him a sharp punch in the ribs with the end of his bow.

When Refugio had passed this last ordeal with credit, he was again embraced, and the official

announcement was made that he was now a full *Cum-pa-whít-la-wíd-deh.* Had he failed in any of these tests—so hard upon the endurance of a young boy—he would have been told to "take the heart of a man" (be brave) and try again; and the second trial would have been given him in a few days The neophyte's struggles with his sickness and sleepiness are sometimes very comical, but the men never smile at him; indeed, their treatment of him is invariably very kind, as is their conduct toward children under all circumstances.

Refugio is now technically "finished" or graduated, but his tasks are by no means done. He has before him a lifetime of hard and patient study, infinite practice, and frequent self-denial, To acquire that marvelous legerdemain which gives the medicine-men their chief prestige is a matter of years of persevering practice. He will have, too, to go through innumerable fasts—some of them for as long as eight days—and many other mortifications of the flesh. The life of a medicine-man is as far as possible from an easy one. The responsibility for the welfare of the whole pueblo—here nearly twelve hundred souls —rests upon his shoulders; and at the cost of his own comfort and health he must secure blessings for his people and avert all ill from them. His rewards are very few, and entirely disproportion-

ate, except the universal respect which he commands.

Refugio, by the way, finally earned the proud privilege of smoking, and thereafter often came to me for the wherewithal to roll the little brown cigarettes of the country in his slender fingers.

Perhaps I need not add that Refugio and his fellows were not "fiends." Their fingers were not yellowed, nor their eyes or wits dimmed. They did not punctuate their occupations with reiterant smokes—just now and then a *cigarro* when they rested or discussed things. The young men of Isleta commonly called me "Por Todos," because I always had tobacco "for all"—but even so, my monthly bill for tobacco and brown papers was a trifle. I know single American boys who burn up more money in cigarettes in two days than it used to cost me to cheer 50 or 60 Isleteño youths for a month. The Indian women never smoke—and few of the Mexican women of New Mexico.

CHAPTER XXIX

A SAINT IN COURT

A Law-abiding People—Where the Office Seeks the Man—He Would Not Be Governor—A Lawsuit for St. Joseph

THE Pueblo Indians have no lawyers. They have a complete government of their own, each village being an independent and full-fledged republic, with a great body of sound and sensible laws, and with perfectly competent machinery to enforce them and to administer justice. The *junta* of *principales,* or congress or body of wise old men, settles all disputes; and the governor and *alguaciles* (sheriffs) enforce these findings. There are no office-seekers—and no salaries. It is one place where in very truth the "office seeks the man." My old friend Juan Rey of Isleta was once chosen by the *principales* to be governor for the year. He flatly refused. They argued with him, with a noble gravity which I have never seen surpassed in church or state. But Juan Rey had a streak of stubbornness which was no mere sur-

face indication. When he still refused the honor, the two stalwart *alguaciles* took him by either arm and dragged him—not fighting, but holding back—to the *calaboz;* and in that dark adobe room imprisoned him without food or water. Next morning the governor unlocked the door and asked: *"Béh-e-weh?* Wilt thou?" *"Een-dah!"* said Juan Rey, "No!" "Then, the horse," said the governor quietly; and the *alguaciles* picked Juan Rey up bodily and set him astride the dreaded *caballo.* This "horse" was a pine log fourteen inches in diameter, without the bark, and smooth from the carrying of many "riders." It stood on four legs, some four feet from the earth floor, and was about twelve feet long. The *alguaciles* took Juan Rey's pretty garters, knotted them together, and tied his feet one to the other under the "belly" of his steed. Then they left him. If you will bestride a fourteen-inch log, and hook your feet together below, you will discover that this is not a comfortable seat to maintain for long. But Juan Rey sat unrelenting for three days, his *"Een-dah!"* low but defiant at each visitation and questioning. It was only on the afternoon of the third day, that, half dead, he looked the governor in the eye at "Wilt thou?" and feebly muttered *"A-h-h-h!* Yes." You may guess that his year as governor had little laxity for such of the younger men as were beginning to

imitate American ways and forget the reverence of "True Believers."

Among these quiet, decorous, kindly, and simple-hearted Children of the Sun, quarrels of any sort are extremely rare; and it is almost unheard of for them to go before an American court. It was only after three years of suffering the illegal detention of their children throughout the summer vacation when they needed them, as other farmers do; and after a scoundrelly principal of a government school fifteen miles away had not only withheld the boys and girls but had had the parents "beaten up" when they came to the school to see them—it was only after three years of this that they consented to go into court for their rights. They had cited me to a score of *juntas,* and had I know not how many more by themselves. Finally, in desperation, they authorized me to secure an attorney and swear out a writ of habeas corpus in a test case for the three children of this same Juan Rey. The youngest, Tuyo, had been abducted from his home by the school official before he was four years old, and had not seen his parents for more than three years. It was a dramatic case throughout, including an attempt to kill or disable Juan Rey, and to make away with me. But I took those three boys back to Isleta with me; and three days later a long caravan of us, in Studebaker wagons and on horseback, toiled

the sandy miles to the Indian school and received the thirty-seven other "little captives," and came back in triumphal procession, to a grand rally of hugging and crying and happy laughter of all the pueblo in the big plaza.

But Tuyo had been forced in school to forget his native Tigua—even the universal Spanish. He was whipped if he dared call "Há-roo," or "Haikó" to his playmates—and at four he soon forgot. His parents knew no English. So there were heart-breaking weeks that my wife and I had to help noble old 'Pita talk to her baby—to interpret between this First American mother and her stolen son. And I can tell you not one of us ever got through a session without tears. In the thirty years since, Tuyo has thrice lived and learned with me in Los Angeles, a year at a time (not too long, lest he forget his People), and I am proud of him. He is well-educated, even by our standards. He married a lovely great-granddaughter of the great Scotchman, George Stephenson, inventor of the locomotive. He owns several houses, a store which he rents to an "American," blooded cows and horses and Durocs. He is a "Good Indian," a good American, a useful citizen—but no thanks to that government Indian school.

But there was a historic lawsuit once between two of the principal Pueblo towns which excited

great interest among all the Indians and Mexicans of the then Territory, and of the few Saxon-Americans there—a lawsuit which nearly made a war—a lawsuit for a saint! It was finally adjudicated by the supreme court of New Mexico in January, 1857. It figures in the printed reports of that high tribunal under the title, "The Pueblo of Laguna *vs.* The Pueblo of Acoma"—being an appeal in the case of Acoma *vs.* Laguna.

Of all the nineteen pueblos of New Mexico, Acoma is by far the most wonderful. Indeed, it is probably the most remarkable "city" in the world. Perched upon the level summit of a great "box" of rock whose perpendicular sides are 357 feet high, and reached by some of the dizziest paths ever trodden by human feet, the prehistoric town looks far across the wilderness. Its quaint terraced houses of gray adobe, its huge church—hardly less wonderful than the pyramids of Egypt as a monument of patient toil—its great reservoir in the solid rock, its superb scenery, its romantic history, and the strange customs of its six hundred people, all are rife with interest to the few Americans who visit the isolated city. Neither history nor tradition tells us when Acoma was founded. The pueblo was once situated on top of the Mesa Encantada (enchanted table-land), which rises over four hundred and fifty feet near the mesa now occupied. A thousand

years ago, or more, a frightful storm swept away the enormous leaning rock which served as a "ladder," and the patient people—who were away at the time—had to build a new city. The present Acoma was an old town when the first European—Coronado, the famous Spanish explorer—saw it in 1540. With that its authentic history begins—a strange, weird history, in scattered fragments, for which we must delve among the curious "memorials" of the Spanish conquerors and the scant records of the heroic priests. I have dealt with it in former chapters.

Laguna lies about twenty miles northeast of Acoma and was long a familiar sight to travelers on the Santa Fé Railway, which skirted the base of the high sloping rock on which the town is built. Passenger-trains now make a detour some miles to the north. It is not an ancient town like Acoma, but was established only after Diego de Vargas had reconquered New Mexico after the bloody Pueblo Rebellion of 1680. Laguna, called in its own Queres tongue "Ka-waík," was established in 1699, by refugees from at least four linguistic stocks of the Pueblos. It has about fourteen hundred people, and a Spanish grant of 125,225 acres, mostly desert, but including some good farm land in the little valley of the San José. Some of its people came from Acoma, some

from Zuñi, some from San Felipe, and Sia and Sandia, and so on.

One of the notable things about the venerable Catholic churches of New Mexico is the number of ancient paintings and statues of the saints which they contain. Some are rude daubs on wood made by devout Indians, and some are canvases of prominent artists of Mexico and Spain. It was concerning one of the latter that the curious lawsuit between Laguna and Acoma arose.

There is considerable mystery concerning this picture, arising from the lack of written history. The painting of San José (St. Joseph) was probably the one presented to Acoma by Charles II of Spain. Entregas, in his "Visitas," enumerates the pictures which he found in the Laguna church in 1773, and mentions among them "a canvas of a yard and a half, with the most holy likeness of St. Joseph with his blue mark, the which was presented by Our Lord the King." The Acomas, however, claim that the king gave the picture to them originally, and there is no doubt that it was in their possession more than a hundred years ago.

When brave Friar Ramirez founded his lonely mission in Acoma in 1629 he dedicated the little adobe chapel "To God, to the Holy Catholic Church, and to St. Joseph." San José was the patron saint of the pueblo, and when the fine

Spanish painting of him was hung on the dull walls of a later church it became an object of peculiar veneration to the simple natives. Their faith in it was touching. Whether it was that the attacks of the merciless Apache might be averted, or that a pestilence might be checked, or that their crops might be abundant, it was to San José that they went with prayers and votive offerings. And as generation after generation was born, lived its quaint life, and was at last laid to rest in the wonderful graveyard, the veneration for the painting grew stronger and clearer, while oil and canvas were growing dim and moldy.

Many years ago—we do not know the date—the people of Laguna found themselves in a very bad way. Several successive crops had failed them, winter storms had wrought havoc to house and farm, and a terrible epidemic had carried off scores of children. And all this time Acoma was prospering wonderfully. Acoma believed it was because of San José; and Laguna began to believe so, too. At last the governor and principal men of Laguna, after solemn council, mounted their silver-trapped ponies, wrapped their costliest blankets about them, and rode over valley and mesa to "the city in the sky." A runner had announced their coming, and they were formally received by the *principales* of Acoma, and escorted to the dark estufa. After a propitiatory smoke the

Laguna spokesman began the speech. They all knew how his pueblo had suffered; Laguna had no saint on whom they could rely. It was now the first of March. Holy Week was almost here, and Laguna desired to celebrate it with unusual ceremonies, hoping thereby to secure divine favor. Would Acoma kindly lend San José to her sister pueblo for a season, that he might bring his blessing to the afflicted town?

A white-headed man of Acoma replied for his people. They knew how angry *Tata Dios* had been with Laguna, and wished to help appease Him if possible. Acoma needed San José's presence in Holy Week; but she was prosperous and would do without him. She would lend him to Laguna for a month, but then he must be returned without fail.

So next day, when the Laguna delegation started homeward, two strong men carried the precious canvas carefully between them, and that night it hung upon the rudely decorated walls of the Laguna church, while hundreds of solemn Indians knelt before it. And in the processions of Holy Week it was borne in a little shrine about the town while its escort fired rusty flint-locks in reiterant salute.

Old men tell me that there was a change in the fortunes of Laguna from that day forth. At all events, when the month was up the Lagunas did

not return the borrowed painting, and the Acoma messengers who came next day to demand it were informed that it would stay where it was unless Acoma could take it by force of arms. The Acomas then appealed to their priest, Fray Mariano de Jesus Lopez, the last of the Franciscans here. He cited the *principales* of both pueblos to appear before him in Acoma on a certain day, bringing the saint.

When they were all assembled there, the priest ordered a season of prayer that God and San José might see justice done in the matter at issue, and after this held mass. He then suggested that they draw lots for the saint, to which both pueblos cordially agreed, believing that God would direct the result. It was a solemn and impressive sight when all were gathered in the great, gloomy church. Near the altar was a *tinaja* (earthen jar) covered with a white cloth. At each side stood a wee Acoma girl dressed in spotless white, from the *paño* over her shoulders to the queer, boot-like buckskin leggings. Beside one of them was the old priest, who acted for Acoma; and beside the other were Luis Saraceno and Margarita Hernandez, on behalf of Laguna. Twelve ballots were put in the *tinaja* and well shaken; eleven were blank, the twelfth had a picture of the saint rudely drawn upon it.

"Draw," said Fray Mariano, when all was

ready; and Maria thrust her little arm into the jar and drew out a ballot, which she handed to the priest. "Acoma, blank! Draw, Lolita, for Laguna." Lolita dove down and drew a blank also. Maria drew the third ballot, and Lolita the fourth —both blanks. And then a devout murmur ran through the gathered Acomas as Maria drew forth the fifth paper, which bore the little picture of San José.

"God has decided in favor of Acoma," said the priest, "and San José stays in his old home." The crowd poured out of the church, the Acomas hugging each other and thanking God, the Lagunas walking surlily away.

Such a feast had never been in Acoma as the grateful people began to prepare; but their rejoicing was short-lived. That very evening a strong armed force of Lagunas came quietly up the great stone "ladder" to the lofty town, and appeared suddenly in front of the church. "Open the door," they said to the frightened sacristan, "or we will break it down. We have come for the saint." The news ran through the little town like wild-fire. All Acoma was wild with grief and rage, and, hopeless as a war with Laguna would have been, it would have commenced then and there but for the counsel of the priest. He exhorted his flock to avoid bloodshed and give the saint up to the Lagunas, leaving a final decision

of the dispute to the courts. His advice prevailed; and after a few hours of excitement the Lagunas departed with their precious booty.

As soon thereafter as the machinery of the law could be set in motion, the pueblo of Acoma filed in the district court of the Second Judicial District of New Mexico a bill of chancery against the pueblo of Laguna, setting forth the above facts in detail.

They also asked that a receiver be appointed to take charge of San José till the matter should be decided. The Lagunas promptly filed an answer setting forth that they knew nothing of Acoma's claim that the picture was originally given to Acoma; that by their own traditions it was clearly the property of Laguna, and that Acoma stole it; that they went peaceably to reclaim it, and Acoma refused to give it up; that Acoma proposed to draw lots for it, but they refused and took it home.

Judge Kirby Benedict, sitting as chancellor, heard this extraordinary case, and, the evidence being overwhelmingly in favor of Acoma, decided accordingly. The Lagunas appealed to the supreme court, which after most careful investigation affirmed the decision of the chancellor. In rendering his decision the supreme justice said:

> Having disposed of all the points, . . . the court deems it not improper to indulge in some reflections on this

interesting case. The history of this painting, its obscure origin, its age, and the fierce contest which these two Indian pueblos have carried on, bespeak the inappreciable value which is placed upon it. The intrinsic value of the oil, paint, and cloth by which San José is represented to the senses, it has been admitted in argument, probably would not exceed twenty-five cents; but this seemingly worthless painting has well-nigh cost these two pueblos a bloody and cruel struggle, and had it not been for weakness on the part of one of the pueblos, its history might have been written in blood. . . . One witness swore that unless San José is in Acoma, the people cannot prevail with God. All these supposed virtues and attributes pertaining to this saint, and the belief that the throne of God can be successfully approached only through him, have contributed to make this a case of deep interest, involving a portraiture of the feelings, passions, and character of these peculiar people. Let the decree below be affirmed.

This settled the matter, and Acoma sent a delegation to take the Saint to his home. Half-way to Laguna they found the painting resting against a tree beside the road, the face toward Acoma. To this day the simple people believe that San José knew he was now free, and was in such haste to get back to Acoma that he started out by himself! The dim and tattered canvas hangs beside the altar in the great church at Acoma still, and will so long as a shred is left.

Fray Mariano, who thus averted a destructive war, met a tragic end in 1848. He went out one

morning to shoot a chicken for dinner. His venerable pistol would not work till he looked into it to see what was the matter. Then it went off and blew out his brains.

Over 40 years later, in Isleta pueblo, my dried-up, wrinkled, cheery old friend and landlord "Tata Lorenso" was translated in precisely the same way—by one of those sulky guns that will not speak till you look down their throat. It was in the adobe room I rented from him that my long "baching" in the pueblo began; and outside its door I received my buckshot valentine (Feb. 14, 1889) from a Penitente assassin—two barrels at 20 yards. "Tata Lorenso" was a gifted teller of the Tigua folklore; and many a night I squatted beside his crackling *fogon,* with the boys, all ears. And I quoted him oft in my book "Pueblo Indian Folkstories." It is a pleasant, friendly name—rather *taking.* And now a prolific writer (largely with scissors) has brought "Tata Lorenso" to life, and given him citizenship in Acoma—there to entertain, love and confide in said resurrectionist. If the latter could have picked up, along with the name, the gray matter "Tata Lorenso" spattered over his *yeso*-white wall!

Photo by Parkhurst

"THE CATHEDRAL OF THE DESERT," SANTA FÉ
Built by the School of American Research

CHAPTER XXX

THE JEMEZ PLATEAU

A Varied Wonderland Itself, of Vast Volcanic Dramas and Ancient Human Romance—From Buffalo Hunters to Architects

ONE of the regions of the Southwest noblest in rugged scenery and romantic human interest running back to the very beginnings, is the great Jemez Plateau lying along the Rio Grande at about the latitude of Santa Fé, and forty to eighty miles west. It is a mighty upland, ranging up from seven thousand feet in altitude, and heaving higher yet in the fine ranges of the Valles and Jemez; a vast volcanic blanketing of creamy tufa and black or red-brown lavas and basalts; forested with splendid pines, and distorted cedars whose twisted trunks are at last become the treasure of the cabinet-maker. It is gashed with many wild and picturesque cañons, from five hundred to two thousand feet in depth; and digitated on the eastern skirt, touching the "Rio Bravo del Norte" (the Rio Grande), with strange columnar cliffs, each the termination of a fan-shaped mesa or table-land, with a cañon on either side. The

Southwest is our only country of *potreros*—the old Spanish name for this peculiar freak of erosion. Other examples are in the Cañon del Muerto. Perhaps the best idea of the ground-plan is had by laying the hand upon a table, with every finger spread to its widest. The Rio Grande flows about north and south through the line of the knuckles, in a wild, dark basaltic gorge more than two thousand feet deep—the Caja del Rio, "Box of the River." The fingers represent the lateral cañons; the wedge-shaped spaces between them are the mesas, narrowing at the knuckles to the *potreros*. These vast tongues of volcanic rock—some of trap, some of lava, some of dazzling pumice—a dozen miles or more in length, and eight to ten in width at their inception at the mountains, where the rivulets began to gnaw them out eons ago, taper to a point at the river, and there break off in great pillars from one thousand to twenty-five hundred feet in height. The great antiquity of these volcanic deposits is evidenced in several places on this eastern slope of the Valles peaks; for here and there still stand, two hundred and three hundred feet aloft, on top of this vast upland, large mesas of the later tufa flow, mere remnants of the upper coverlet, all the rest of which has long since been eroded away. This was a favorite region of the prehistoric Pueblos

—one of their first permanent havens and sanctuaries in the immemorial days when they had first broken away from their brethren of the Plains, who lived by the buffalo which was their meat and house (the hides making the tepee), and blanket, and thread (the sinews), and needles and awls (the splintered bones); and its "chips" (the *bois de vache*) virtually their only fuel on the treeless prairies. They planted their American corn, and harvested it if the buffalo were accommodating enough to wait; but if the life-giving herd drifted far north or south, the less vital crop was left to perish. The Pueblos (or those who *became* "Cliff-dwellers" and "Cave-dwellers," and "Pueblos" in the Spanish nomenclature and ours) apparently nucleated in a desire to pursue agriculture rather than the chase. At any rate, these bands of ex-buffalo-hunters and nomads struck off from the Plains westward to the fastnesses of the Rockies, in the southerly "vertebræ"; and took asylum in the rugged passes. But here they were pounced upon and harassed by other nomads, like the Comanche, and crowded largely across the Rio Grande, though some fortified themselves on the eastern bank. There were no more beneficent bisons to furnish board and lodging; the region was far more arid, and with less generous water-courses; and marauding enemies were on every hand. But these Pilgrims

were an adaptive and ingenious people. The Yankees, among whom and of whom I was born, were not quite so inventive. There were no buffalo hides to build lodges of—and they had neither axes nor saws for felling timber; and for the first time in North America, above Mexico, there developed a race of *masons*. In the peculiar cañons into which they drifted, the alternate strata of volcanic rock were sometimes of such different hardness that an intermediate stratum had weathered out by ten or twenty feet, leaving the basaltic upper and lower strata, six to twelve feet apart, perhaps, as handy a floor and roof as one could ask, while the back of the weathered "sandwich" stratum was the third or back wall of a room. So there were only the front and two ends to build, of fragments fallen from the same cliff; and here was a habitable room, safe and warm, generally several hundred feet above the bed of the stream in the narrow valley, and perfectly protected from above by its lava cap. Along such shelves of volcanic rock, sometimes half a mile or more available for such use, they built their little cells of homes, and fortified the dizzy trails by which the shelf was reached, and further insured themselves by making such tiny doorways that an enemy could be beaten to death by a woman or a child inside while he was trying to edge his way in. And of course these tiny doors gave rise

among the Closet Scientists to the sure conviction that they were built by "a race of dwarfs." Their skeletons show us that the Cliff-dwellers were of the same normal stature as the Pueblo Indians of to-day, their lineal descendants. These "shelf-house" cañons were mostly far west of the Rio Grande.

In most portions of this great plateau, the nibbling brooklets, pushed by the steep gradient from the peaks, had cut down five hundred feet or more through the great tufa blanket which covers some thousands of square miles. These cliffs were "negotiable" only by cutting toe-holds in zigzags down their face. At the bottom was a smiling little valley, a quarter of a mile across, as wooded with willows and cottonwood as the heights above with pine and piñon, and plenty of fertile soil for the modest needs of a little community whose only crops were the American corn and bean and a small squash.

When they had safely scrambled down the cliffs into this sunny and secure valley, the first thought of these wanderers was to "dig in." Like the modern soldier, they had to intrench against the enemy—and also against the weather. And these beautiful tufa cliffs were just the most accommodating wall that any one ever dug a house out of. The friable rock could be clawed out with a sharpened, fire-hardened stick; but the cliff itself went

even farther than this, and furnished the knives to carve its own face. Nodules of obsidian, the volcanic glass fused in the same crater from which this incalculable blanket of tufa was spouted, occurred everywhere in the cliff—roundish nuggets, from the size of an egg to that of one's head, and of all degrees of vitrification from dead opaqueness to clear translucency. From these cores of glass, primitive man all over the Americas chipped his knives, and the spalls from which to shape arrow-heads; and the obsidian of the cliff furnished the most useful of tools for hollowing out the little grottos in which a family could take refuge. Nor did this take long; a very few days' steady labor would "dig a family in" to the face of the cliff, as snug and warm as rabbits in their burrow. There is perhaps no place where man's debt to the volcano has a more graphic or so romantic an entry. It is the most notable region in North America of the most burnt-out products of the great fire peaks that once remade the face of our whole West. When I was a boy in New England I thought the "*floating stone*" with which I scrubbed my dingy fist a wonderful curiosity. I little dreamed that more than half a century later I should explore great areas of it —enough pumice to cleanse the hands of all the boys of all the world for all time. And now I never think of pumice without remembering the

blue lake of Amatitlan, at the foot of the vast Volcan de Agua, in Guatemala; and of once that we went swimming there and idly splashed one another with the rounded nodules, from the size of my fist to that of my head, which had rained down in a tremendous hail upon these shores; and how, when we started to row back an hour later with the wind which had baffled our rowing to the other end of the lake, we presently overtook this "fleet" of gray stones, sailing along in order like a flock of ducks.

The most notable of these cañons is that of the now famous Tyuonyi, generally known as the Rito de los Frijoles, "Creek of the Beans." This was "discovered" in 1890 by the great historian Adolf F. Bandelier and myself; that is, discovered to science and literature. The Indians had known it for ages; and those of the modern pueblo of Cochití trace their descent from it through many successive steps of short migration, running through many centuries. In this enchanted valley, Bandelier laid the scene of his almost photographic novel of prehistoric Indian life, "The Delight Makers;" and I have given it attention in my book, "The Land of Poco Tiempo," with a chapter entitled, "The Wanderings of Cochití."

In the decade of his incomparable ethnologic and documentary studies of the Southwest, Bandelier lived a year or so in the Pueblo of Cochití

and mastered most of its esoteric secrets. He was adopted as "Brother" by that fine Cochiteño, José Hilario Montoya, one of the Principales; and through him learned of the ancient home in Tyuonyi. The great historian was not a muscular man; but he tramped tens of thousands of miles, generally alone, always unarmed, in New Mexico, Arizona, and Mexico, through years when the raiding Apaches were at their worst. Like John Muir, it was not physical strength that carried him—either would take a crust of bread, and a pinch of tea, and go like a cat over cliff and crag, a day's trip no mere athlete could follow. We trudged together from Cochití, crossing the high Potreros and their intervening cañons; he carrying a small transit and his heavy satchel of notes (which he kept religiously every day) and I my forty-pound camera on my back. I shall never forget our sensations as we came to the end of the prehistoric trail and looked down into the Tyuonyi; at our right the wild, shadowy "Bocas" where the little brook plunges headlong into the black gorge of the Rio Grande, and to the left the long line of creamy tufa cliffs peppered everywhere with the immemorial burrow-homes of prehistoric man. We surveyed and photographed this enchanted valley and its fascinating ruins. We also succeeded in identifying the cave-clusters of most of the ancient clans. On this

RUINS OF THE GREAT CHURCH OF TABIRÁ, "GRAN QUIVIRA"
Deserted 1670

BANDELIER AT DOOR OF OLD CHURCH
Pueblo of Santo Domingo, 1880

same long, hard tramp we also photographed and made known to the world the "Stone Mountain Lions" of the Potrero de los Idolos, and the Potrero de las Vacas, unique in North America; and the picturesque Cueva Pintada.

The Rito has since very properly been created the "Bandelier National Monument." Now it has become not only a common point of pilgrimage from Santa Fé, forty miles away, but the favorite seat of the "summer school" of the School of American Research. That extraordinarily vital agency in science owes its birth and growth to the genius of Edgar L. Hewett; and has already made New Mexico a focal center of international interest. The State has been enlightened and helpful in its attitude toward scholarship, and has given to the school the historic "Palace of the Governors" in Santa Fé, the most storied and venerable public building in the United States, with an appropriation for maintenance. We have repaired and safeguarded and rehabilitated this ancient adobe building, and installed in it the Museum of New Mexico. In 1917 we dedicated a new and imposing building, which seems to "belong" as much as does the *Palacio* itself, and this is "The Cathedral of the Desert"—the most ambitious structure ever built of adobe anywhere (not forgetting the vast structures of the Gran Chimu), and in my judgment the most distinctive

and architecturally interesting building in this country.[1] Its architecture is a harmonious combination of six of the most notable of the old Franciscan mission churches of New Mexico of the early seventeenth century—Acoma, San Felipe, Cochití, Laguna, Santa Ana and Pecos—and is a monument also to the constructive skill of one of our "boys," Jesse L. Nusbaum. It is the property of the School of American Research, and serves as an art temple. The attention of artists has been focusing upon the Southwest within the last few years, as more and more painters are learning that there is no region in the world so rich in pictorial material, yet of comfortable access. The school not only maintains the historic and prehistoric museum and fosters art and artists, but conducts archæological expeditions at many points in the Southwest and even in Mexico and Central America. It is not too much to say—and I say it from knowledge of this work as it has been done under whatsoever auspices in this country in the last third of a century—it is not too much to say that this school under Dr. Hewett's direction, and with the young men and women of our training, has set an absolutely new pace and new standards both in physical efficiency and ingenuity, and in scientific accuracy of "field work," exploration, and excavation. Such

[1] See page 415.

things had been done too much with the point of view of the museum collector (who is after all only a "glorified pot-hunter") and without reference to the monumental character of the ruins themselves. And our own government, through its Bureau of Ethnology, was long one of the worst offenders. The prehistoric Pueblo ruin typically presents merely a great low mound of earth and broken rock. The falling of the terraced communal houses, once of five and six stories, has buried the ground-plan in this débris. Excavation for a few feet begins to discover the lower rooms, of which there are sometimes as many as five hundred in a single ruin. The first problem is of course to take care of the dirt excavated. Naturally, the easiest way is to dig out one room and cart the dirt aside; and then empty the débris of the second room into the emptied first, and the third room into the emptied second, and so on; gathering the bones and stone implements and turquoise and shell ornaments and whole or broken potteries indiscriminately to be saved; keeping "just one room ahead"—and at the end of the season leaving the last room of the ruin uncovered, but all the rest refilled in this easy but vandal checker-game of pseudo-archæology. It seems almost incredible that scientists and explorers and governments should have been so blind, and should have had so little respect for

the antiquities they pretended to study, and really meant to. But that was the ordinary program. I believe it is undisputed that our School of American Research (which began as the "School of American Archæology," under the venerable Archæological Institute of America) was the first agency to save the architectural monument—to take the jumbled mound of a Pueblo ruin, dissect it skilfully, remove all the débris to some suitable distance, and leave the whole ground-plan visible, impressive and instructive. The walls of these ground-floor rooms stand four to eight feet high, and in places there are remnants of another story. The whole ground-plan suggests a gigantic honeycomb; for these lower rooms were little cells, dark and almost unventilated, and serving finally for store-rooms only, as successive stories were built above, with access to the lower rooms through trap-doors and ladders.

At the Rito de los Frijoles we have the most notable object-lesson and memorial of the methods and the sequences by which these harassed wanderers from the Buffalo Plains settled down to become home-dwellers and farmers. First they burrowed hundreds of caves in the friable tufa cliffs—little cubbyholes barely large enough for a few people to cuddle in, but sometimes in "suites" of three or four such caves. They are very dry and warm; and in the Summer School most of us

© Photo by Quimu and Chas. F. Lummis

TYUONYI—THE RITO DE LOS FRIJOLES

The North Cliff, full of cave-dwellings; and ruin of the great round Communal House

prefer to clamber up the breathless talus to the caves and sleep in them rather than in the modern tent-houses of the camp beside the brook.

In time, as they became secure and settled, and their crops throve by irrigation from the little trout-brook—for even more important than their invention of stone houses in place of tents, they had turned their farming from chance to science and had learned to insure against drouth—and more room was needed, they built masonry rooms of blocks of tufa fallen from the cliff and broken into convenient size, setting these rooms right against the foot of the cliff and so that the cave-room was included. Seven or eight feet up the face of the cliff they gouged out little sockets, and in these tucked the ends of pine rafters dragged or rolled down from the mesa top; and then covered these beams with branches and weeds and clay so as to make the regulation roof of the old Southwest. And in places they built these outer tenements two and three stories high—of course terraced—and in the face of the cliff to-day you can still see the sockets of those long-crumbled beams. And of course the houses themselves fell centuries ago into an indistinguishable mass, a part of the big talus of fragments fallen from the cliff. It was only when we excavated along the foot of the cliff that we uncovered this "talus pueblo." See p. 293.

Probably it was generations—perhaps centuries—later, when, multiplied and prosperous, relatively safe from the Navajo and Comanche, these brown First Americans of the Tyuonyi, who had lived so long in their little clusters of caves, separated as to clan, set themselves to build a huge communal house down in the lap of the little valley. Most of us would look with some apprehension at the task of "clearing" and leveling ten acres without horses or mules or scrapers or plows or shovels or hoes or axes. But these people had time and patience and intention. They leveled their site; and they wrought tens of thousands of rudely squared building-stones—slabs of tufa broken to the average size of an adobe "brick," or about sixteen by twelve inches, and anywhere from four to ten inches thick; and brought young mountains of adobe clay long distances on their backs, and mixed it into mortar, and built up, brick by brick and cell by cell, this great terraced tenement, a home and a fort for six hundred to eight hundred people, and full six stories high (as the ground-plan proves) on the outside. Most such communal houses in the Pueblo country were rectangular; but the big house of the Rito was a rude circle. The inner court was about five hundred feet in diameter. From this, all around, the house rose in great "steps," the second story standing one room back

from the front of the first, the third story one room back from the front of the second, and so on, On this inner court were little doors, and tiny windows glazed with sheets of translucent gypsum. From ground to roof, and roof to roof upward, were ladders of tapering pine, the rounds lashed on with rawhide. So each story had in front a broad promenade, the roof of the next lower story, all around that great amphitheater. On the outside the great wall rose sheer and straight the whole six stories, without openings, except loopholes in the rooms high up. The circle of houses was continuous except for one narrow gateway toward the west, which of course was barricaded at night. So here these quiet farmers at last knew the ease of genuine security. Their fortress home was absolutely impregnable to any weapons then known; their trails down the cliffs were easily guarded against surprise; their fields flourished —and to this day we find, in the ruins, indurated stalks of their squashes, and shrunken ears of their red and blue corn, and even withered pods of the beans. And, to this day, the traces of their ancient *acequias*. No modern engineer could run a better line for an irrigating ditch than we find laid out by the Pueblos a thousand years ago.

CHAPTER XXXI

YANKEES OF THE SOUTHWEST

The First American Artists and their Crafts—Baskets for Every Use, from Cradles to Bridges—Classic Potteries—Remodeling One's Head

WHAT was quite as important as the change of this original American people from a nomad, drifting, hunting, warring life, to be sedentary, provident, home-loving farmers, architects, and irrigators, was the evolution in thought and industry—and finally even in physical characteristics. When they were buffalo-hunters, dwelling in buffalo-hide tents, following the buffalo and its migrations by "striking" their camp and loading it upon their trains of dogs by means of the *travois*—each dog being harnessed between the lodge-poles, which dragged far behind him and carried in hampers between them the tent and other baggage—of course no people following that sort of life would ever think of inventing pottery. They could not use it, if it were given to them. Bags and pouches of hide, baskets of willow and

grass, pitched inside, the intestines of buffalo—these were their devices for storing and carrying liquid.

The differing ingenuities with which primitive man in the Southwest solved the inevitable housekeeping problem of "containers" are among the most interesting phases not alone of their practical, but of their artistic expression and development. Broadly speaking, basketry for the nomads, pottery for the sedentary tribes; but not without overlappings, either way. Capacious carafe-shaped water-bottles of the Apaches and Navajos and others were of iron weave to resist the roughest transportation, and water-proofed inside (and sometimes out) with the gum of the piñon. I have one, made about the year 1840, which holds fully eight gallons. They wove baskets also for their cradles—as did all wandering tribes, each after a fashion of its own—and upon these the infants were bound, even as upon the board *tá-qui-ru* of the Pueblos. Nor are these "baby-boards" to be sneezed at for savage folly. They were comfortable, hygienic, safe, and handy—indispensable in the circumstances of those people, and with many points of accommodation to parents to-day. My own youngest daughter, born in an Indian pueblo, passed her first few months on the *tá-qui-ru*. Its little collapsible hood of willow twigs, a primitive forecast of our baby-buggy

top, was of service to hold high from the face a blanket against the cold, or a screen against the flies; the board could be leaned up against the wall, or laid flat on the floor, or swung by two cords from the ceiling; and it could be laid on a car seat with perfect safety against sliding off.

But there were baskets not only for water but for cooking! These also were of an iron weave, but not pitched. But the mush, or corn meal or ground piñon nuts or acorns, soon made the texture water-proof from swelling with the dampness and the soaking in of the meal. Small, water-worn stones, generally of porphyry, were heated in the camp-fire and dropped into the mush, and replaced with other hot ones patiently until the mush was well cooked.

There were broad, flaring baskets for the wild fruits, and also wicker-baskets to winnow wild seeds; and big saucer-shaped baskets upon which to play aboriginal games; and hopper baskets without a bottom, which were gummed to the top of a stone mortar to increase its capacity. In fact there were baskets for everything—including caps. The tall Mohaves of the Colorado River desert still construct granaries which are great rude baskets, sometimes eight feet high and six across, in which to store their mesquite screw-beans. The old homes of the Mohaves are themselves, in effect, square or rectangular baskets—

© by Chas. F. Lummis

AN ANCIENT SHRINE OF THE RITO PEOPLE

Only photo ever made showing the stone mountain lions and their entire stonehenge

CAVES OF THE EAGLE CLAN, RITO DE LOS FRIJOLES

CLIFF AND CAVES OF PU-YÉ

framed with cottonwood poles set in the ground and others lashed to them at bottom, middle and top; and slender branches of "arrow-weed" and other bushes woven in and out in rude but effective basketry. See illustration, page 81.

Some of the Serrano Indians of Southern California have similar basket-granaries for their acorns. The basketry of the California Indians, particularly those in the northern part of the State, is famous among collectors the world over. Nothing more beautiful has ever been made, perhaps, than some of the ceremonial "gift-baskets," into which the tiny plume-feathers of hundreds of California quail have been woven, or the scarlet and yellow feathers of woodpeckers and other birds, till the outer surface is thickly furred with the velvety plumage.

Basket making is the oldest of the textile arts—the far beginning of all the vast industry with which millions of looms are humming to-day. Primitive man braided and pleated and wove twigs and grasses and fibers for baskets before he began weaving garments—long before. It is an older art than pottery, and more universal—for the obvious reason of its greater adaptability to the vicissitudes of the average primitive environment. The basket-maker has thriven in the tropics and in the Arctic Circle since Time began.

As with all primitive workmanship, the ancient basket everywhere was beautiful in its degree and kind. But it is beyond reasonable question that the American Indian leads the field. In some localities—as in California, Oregon, and Nevada—he makes the most beautiful and the most perfect basket ever turned out by man. Rather, *she* makes; for basketry in America is mostly done by women. One "ignorant" Indian woman, Dat-so-la-le, of the Wá-sin tribe (the decimated Washoes) has made baskets which sold at fifteen hundred dollars each—true works of art; of the most exquisite fineness (thirty stitches to the inch) and of classic shape and decoration. I have a Mesa Grande basket with a rattlesnake beginning at the first stitch and winding symmetrically through the pattern up to the rim; the rattles as perfectly depicted in the stitch as our best pen-and-ink artist could do it.

And this is one of the many arts—true American Art—which our Government has largely "educated" out of the first Americans! We denounce the fanatic Spanish priests who destroyed many of the old picture-writings and idols of Mexico and Peru; but they had at least the strong excuse of sincere religious conviction that these idolatrous devices stood in the way of the salvation of the natives. And, in place, they gave the natives a great language which is theirs to this

day, and made scholars, authors and presidents from among them. We have no excuse whatever, save that of fatuous ignorance and stupidity, in not realizing not merely the art value but the money value of a Washoe basket or Navajo blanket or Moqui bowl or Acoma *tinaja,* as compared with brogans and Mother-Hubbards and crazy-quilts and other civilized trash which the Government has expended millions to teach our Indians in place of their own incomparably better crafts.

About twenty years ago, when Miss Estelle Reel became Superintendent of all Indian schools for the Government, she made a determined, diplomatic, and ingenious campaign to save and revive the old Indian industries; but this intelligent program did not become hereditary in the Indian Bureau after her departure. Something of the importance of these arts may be learned from the publications of a more enlightened branch of our same Government, the Smithsonian Institution and the Bureau of American Ethnology. Otis T. Mason's monumental book in two volumes on "Indian Basketry" will be a revelation to the average reader. The publications of William H. Holmes, Dr. Washington Matthews, and many others in that service prove overwhelmingly that we had—and still have—an ancient original American Art, worthy not only to be preserved for historic, esthetic, and monetary reasons, but entirely

competent to become a part of the manual of our modern arists.

Perhaps the strangest piece of basketry in the Southwest is the old Indian bridge above the pueblo of San Felipe, just below the great lava cliff on which still loom the ruins of the historic church of the "Miracle of San Felipe" in 1680. This bridge has stood the angry floods of the "Fierce River of the North," the Rio Grande, for generations. No other bridge has endured that river half so long. Mexican and "American" bridges on driven piles, steel railroad-bridges by our best engineers, have succumbed to the battering freshets and burrowing quicksands. But the basket-bridge of San Felipe is as good as ever. It is simply nine great caissons of supple willows woven into huge baskets and filled with heavy boulders, and spanned from caisson to caisson each with a huge timber hewn from a mountain pine. I have stood upon it when the howling torrent came nearly up to the sixteen-inch foot-plank and splashed high above the caissons, but it never trembled. And when a quicksand developed, the caisson—instead of being uprooted as a pile would be—simply settled evenly with its great bellyful of rock.

I have a deep reverence for the New England housewife. I was reared by noble specimens; and

THE OLD INDIAN BASKETRY BRIDGE, PUEBLO OF SAN FELIPE

Photos by Chas. F. Lummis

RUINS OF CHURCH AT GIÚ-SE-WA, 1617. See p. 454

I learned their varieties in my youthful roamings afoot, horseback, and on the old Columbia high-wheeled bicycle (on which I was said to be first to make a thousand-mile trip). They were wonderful women, by class—notable for neatness, prudence, frugality, and ingenuity. But if any one of them had been transported to a desert and handed a few willow switches and some straws, and told, "Here, make these into a pot to cook your mush in"—I think the most resourceful of them would have faltered. But the women of the wandering tribes of the Southwest did that very thing ages ago. "Yankee ingenuity" was not confined to New England, nor to people of our speech.

But baskets, no matter how artfully made, are a poor substitute for dishes; and when man sits down in a home, no matter how primitive, he must have something better. So these ancient people, dim ages ago, slowly learned to model clay and to bake it into serviceable dishes; and as every primitive people is rich in the love of art, and intensely stirred by the need of beautifying everything that is to be used, these cave-dwellers became potters whose jars and vases and bowls are an ornament to-day to the proudest art gallery. So artistic in design, so full of fancy and beauty in decoration are they that we have more than a little reason to blush at our relative lack of taste. Even the cooking-pots had to be orna-

mented—either by incision or by pressure of the thumb on the wet clay as it was built up in coils like a pie-crust to form the bowl—and I have prehistoric shards on which the "Bertillon marks," the lines of the thumb, are plainly visible, though the slender hand that modeled that old dish, and doubtless cooked in it, has been dust for a millennium. We should feel somewhat ruffled if we had to go back to the old well-sweep of our grandfathers; but that was much more convenient than bringing water on one's head for half a mile or so, and perhaps up a dizzy cliff. But the old Pueblos made beautifully symmetrical *tinajas,* or water-jars, of a capacity from four to six gallons; and to this day in the inhabited Pueblo towns it is still a beautiful sight to watch the long file of maids and matrons coming at sunrise from the spring, nobly erect, each balancing securely upon her head the brimming and highly decorated *tinaja.* These people, descendants of the Cliff-dwellers, still make cooking-pots and *tinajas,* and still bigger *tinajones* of up to fifteen gallons, in which to keep their bread fresh—much more effective, of course, than our tin "cake-boxes." They are not quite so skilful potters as their ancestors, for they are losing something of the old faith and much of the old necessity; and the temptation of tin buckets and iron kettles is undermining their aboriginal art. But there are still individual women—like

the famous Nam-pé-ya of Moqui, and some of the women of San Ildefonso who come to make pottery for us in the courtyard of the Palace of the Governors in Santa Fé—who keep the art. Though they never knew the potter's wheel, these ancients—sitting on the ground and revolving the clay with their bare toes as they modeled with their fingers—turned out jars of classic beauty and symmetry; and the decoration, while always purely conventional and symbolic, reached a very high plane in art.

In personal ornaments also they made a great advance when they settled down. The longing for "jewelry" is nearly as old as humanity itself; and in the new mode of life these people had better opportunity for this expression of sentiment and art. From unknown ages they have been digging out nuggets of turquoise from a chalky hill, "Mount Chalchihuitl," some twenty miles southeast of Santa Fé. This has always been the favorite "gem" of all the tribes of the Southwest and of Mexico, and it was the most important article of barter they had in primitive times. Mauling chunks of the matrix out from the rude tunnel they had burrowed in this sacred hill, cracking the chunks into bits, rubbing these down on gritty sandstones till the matrix was all gone and the blue or greenish turquoise was smoothed and rounded, they perforated this bead or pendant

with an agate point set in a bow-drill, and strung it on threads of deer sinew. There are also in the Southwest spars and other minerals of ornamental color and striation, which made admirable beads. And they sawed the bones of large birds and small animals into beads, with "saws" of jagged obsidian, or agate from the petrified forest of Arizona —another of the most important "circulating mediums" of a million square miles. This aboriginal barter was a remarkable development of primitive business. The trader was a privileged character, and held sacred even between tribes at war; and the buffalo robes of the Plains found their way well down into Mexico, and the parrot plumes of Central America reached the sacred ceremonial chambers of northern New Mexico and Colorado, and the turquoise and the petrified wood circulated a thousand miles in each direction; and the shells of the Gulf of California came back in barter to be made into the most beautiful wampum of the Cliff-dwellers.

A certain leisure and security is necessary not only to become a jeweler but to be a weaver. Out on the Buffalo Plains our Indians had dressed in buckskins, for shirts and leggings and skirts and moccasins. In the new environment buckskin was still chiefly used, but it was not the only recourse. In certain localities the ancient Pueblos raised a little native cotton which they wove into very

good fabrics. In lieu of buffalo robes they made blankets of rabbit skins—cut in strips, twisted and dried with the hair outside, and the strands sewed together something after the fashion of our grandmothers' rag carpets. These were very warm, and reasonably "cheap" in a country teeming with cottontails and jack-rabbits. There were plenty of bears, too—brown and grizzly and silver-tip—but we know pretty well that these were seldom killed, not because of a superstition like that of the Navajos, but because with stone-tipped arrows it would be pretty hard to extinguish a great beast whom a dozen or twenty Winchester bullets are often required to subdue. And also we know, because among the innumerable animal bones we excavate in these prehistoric ruins those of the bear are extremely uncommon.

But the finest fowl in America—the one that really ought to be the national bird, if only because he is exclusively American (some might say because, also, he is a type of our American modesty), whereas the eagle is of every land—was most abundant in all the higher ranges of the Pueblos, the wild turkey. There were no hens, cats, peacocks, guinea-fowl, horses or mules, cattle or sheep in America until the Spanish introduced them; but the wild turkey was domesticated by the Pueblos and had also a ceremonial importance. And from the feathers of this great

bird the Cliff-dwellers wove (even as the Aztecs wove feathers) fine capes and mantles, chiefly for ceremonial use and sacred dances, but also of real utility as protection. Eagles were also captured and kept prisoner by tether of buckskin or in little pens of sticks, for worshipful reasons and for "medicine-making" and magic, as well as for insignia and distinction.

One of the most universal plants of the Southwest, common alike to the lofty, pine-clad plateaus and the burning deserts of three or four thousand feet less altitude, is the *palmilla*, the "Spanish bayonet," also called *amole*. These long bayonet "leaves," tipped with a needle-pointed thorn, were pounded up and cleansed of the pulpy matter, leaving a mass of tough slender fibers excellent for thread and for weaving. Of these fibers the Cliff-dwellers wove their sandals—some of them so compact as to outwear good sole leather. It is a beautiful little touch of the vitality and sincerity of the art instinct in primitive man that we find the soles of these sandals wrought in beautiful raised patterns, though they were to be worn out upon the sharp gravels and abrading lavas. It is literally true that no act of life with the ancient Pueblos was so trivial or so selfish as to be without a distinct religious coloration and motive; and no article of use so trivial or so base that it must not be made beautiful. The pulpy

root, by the way, of this sandal-making amole is a natural soap, better for the human hair and for woolen fabrics than any manufactured in civilization.

These arts and crafts of a people who were at last come to shelter and security from attack or from stampeding, developed in very many ways beyond the scope of a nomad. But above all, the effect of stability, safety, and shelter upon the mind was notable. It developed the rudiments of "literature" which man has even in his most primitive stage, but which evolves very slowly until he becomes sedentary. For countless ages the laws and the traditions of the tribe had come down from father to son by word of mouth to faithful and attentive ears; but, now that they could gather around the little smoky hearths at night, and sit and think and talk and dream, the volume of this folk-lore developed greatly, not only in mass but in imagination. The unwritten but unvarying lore of the Pueblos, largely retained even to this day by some of the oldest men, was so staggering in quantity, so full of sanity and imagination and beauty that our students who have delved in that rich field have a new respect for the universal heritage of man. I have recounted a score or so of these First American fairy-tales in my book, "Pueblo Indian Folk

Stories," but this is only a hint of the great treasure-house of such lore that was the heritage of the Pueblo Indian. The great mass of their tribal laws and ceremonials and sacred songs would make a very respectable library; and much of it has been saved and recorded by our students.

We in civilization have really "forgotten how to remember," and hardly "know what a memory is for!" We have note-books and "mems" and card-catalogues and indexes and text-books and secretaries to remember for us; and with many of us a pencil is the larger part of our memory. But when people had no writing and no secretaries and no books—why, all they had to do was just remember! These stories and rituals, told down from generation to generation, were as literally kept in form as if they had been printed. Indeed they were more accurate than the average reprint of one of our old favorite songs. I doubt if all the Cliff-dwellers in New Mexico put together ever boggled so much in all their great repertory as I have seen "Annie Laurie" twisted by publishers.

In the greatest ceremonial of the Navajos, the wonderful "Nine Days' Chant," there are hundreds of songs. In some the words are archaic, of a tongue no man now knows. But they must be precisely given—and there are many wise old men who *know*. If even in the last song of the

ninth day a syllable or a note is sung wrong, the whole elaborate and costly ceremonial is "off," void and of no effect for the healing of the patient who has paid the equivalent of five hundred dollars for it.

The education of an Indian boy began from the time he was four; if he was brought up for any important position in the tribe this education was continuous throughout his life. The discipline was strict, and nothing short of letter-perfect was tolerated. True, they knew no "letter"; but accent and inflection and sound were as strict as they would be with a music master among us. The fine old Pueblo woman, Marcelina Abeita, who was godmother to my youngest daughter (born in the pueblo), maintained a little store, as well as large herds of cattle and horses and flocks of sheep, and a hundred vehicles of all sorts, including a horse-power threshing-machine. Her store business ran up to sixty thousand dollars a year. It was largely on credit, in five-, ten-, and twenty-five-cent purchases, the "bill" being invariably paid when the customer sold sheep or blankets or grapes or otherwise acquired the wherewithal. And Marcelina's "books" were her good gray head! And she never made a mistake. Of course each debtor knew perfectly well the amount of his indebtedness; but Marcelina knew also, and I never knew her "statement" to be

questioned. It was her father, by the way, Ambrosio Abeita, who loaned our Government about twenty thousand dollars during the Civil War to pay off troops in New Mexico. Marcelina's son, Pablo Abeita, shown in my illustration in his youth (p. 271), was god-father to my son Quimu. He was of great service to the government during the World War, and is now the most prominent Indian in the Southwest. Also, one of the finest-looking.

But this sitting safe around the family hearth at night, in comfort and sociability and reflection, had another very remarkable effect. It resculptured the heads and features of these people. The high cheek-bones, the narrow, prow-like countenances of the hunter and warrior, ever drifting, ever alert, ever tense, here softened and rounded, imperceptibly but surely. Those tiresome scientists who try to scare us off from learning by the use of frightful Greek words have classified two broad types as "dolichocephalic" and "brachycephalic." Which means in plain English "narrow head" and "broad head," or we more familiarly say "hatchet-faced" and "round-headed." The skulls of the Cliff-dwellers and their descendants the Pueblos became on the average far squarer and broader than those of their nomad neighbors. This is no strange thing

AMBROSIO ABEITA, PUEBLO GOVERNOR

Who loaned our government the money to pay off troops in New Mexico in the Civil War

to occur in a "race," for it is frequently noted in the individual. Porfirio Diaz, the great ruler of Mexico for thirty years, within my own friendship with him changed the whole shape of his head. Theodore Roosevelt, when I first knew him at Harvard in 1877, was essentially "hatchet-faced," even "jimber-jawed," besides being spindle-necked and thin-chested and weakling of look. In the forty years of our friendship I had chance to note his cranial development, for after college it was ten years before we met again. Every one knows what a great, square, powerful head finally dominated his bull-like shoulders. There is no question that deep thought tends to round out the skull more than the use merely of the perceptive faculties. And on the average, too, the general "build" of the farmer becomes notably different from that of the roving hunter.

I have not room to show this diagrammatically by a series of portraits; but such types as are incidentally shown at pages 214, 252, 264, and so on are obviously Thinkers rather than warriors.

CHAPTER XXXII

MORE OF THE JEMEZ PLATEAU

The Shú-fin-né and the Pu-yé—Cave Dwellings and Great Houses—The Hot Springs and Old Giú-se-wa

ON the same eastern side of this great Jemez upland are the ruins of two prehistoric Cave-dweller communities as important to the student as those of the Rito de los Frijoles, and almost equal in the beauty of their setting. These are the two tufa mesas, one on each side of the cañon of the Santa Clara brooklet, which are "sole survivors" of the upper and latest volcanic blanket which once overlaid that whole region. Everything else of that vast apron of compacted volcanic ash has been wasted away by erosion, down to a lava cap which covers the tufa blanket below. These two remnant "islands" of the former level are about two hundred and fifty feet high and, in the dim old days, must have swarmed like ant-heaps. That on the north of the cañon is called the "Shú-fin-né," and the one to the south, the "Pu-yé." They are high enough in altitude

to be among the royal pines, and their outlook in every direction is very beautiful. On top of each mesa was a great communal house from four to six stories tall and hundreds of yards long, built of fairly regular blocks of tufa, laid in mud mortar. These great tenements were on the same fortress plan as that of the Rito, but rectangular instead of rounded; with sheer outside walls and only one narrow gate to enter the big central court from which all the dwellings were terraced up in giant steps. At the foot of the cliff, and guarding the trail, were the earliest dwellings of all—the cavate lodges hollowed in the cliff, and with masonry rooms later built outside to the height of three stories. The ruin of the Pu-yé was excavated by the School of American Research in 1909; and the whole ground-plan of sixteen hundred rooms (the south house was 218 by eighty feet) can be seen there to-day, a monument not only to the tireless industry of the ancient builders but to the injection of common sense and Western ingenuity into exploration by the students of to-day. Some of the pottery found in the ruins of the Pu-yé ranks among the best aboriginal ceramics of the New World. It gives one a queer little nudge of awe to follow the prehistoric trail of the Pu-yé down to the Rito, especially where—as at Fin-in-ni-kang-weé-ai—the soft patter of moccasined feet for centuries has

worn the narrow path down waist-deep into the rock.

At all these ruins—as at all the modern pueblos—the most important (though frequently not the most visible) building is the estufa (the Spanish name which has been in use for more than three centuries for this ceremonial room, which is when crowded indeed remindful of a "stove," (*estufa*). Many writers now use the provincial Moqui word kiva. But I prefer the historic designation which was applied for so many centuries to the sacred council-rooms of every pueblo, rather than the local name in one remote pueblo, never heard in any other pueblo until adopted by yesterday's writers. This sanctuary of council, in which strangers were never allowed to enter, and which was reserved for the most serious deliberations and ceremonials of the wise men, was preferably underground or mostly so—as it is to-day in the pueblo of Taos with its two great pyramids of communal houses—and was in most of the prehistoric ruins. Our excavations at the Rito developed beautiful types of the estufa, two big ones of forty feet in diameter and eight feet deep in the court of the great community house, and a smaller but beautiful one, also subterranean, hollowed from the tufa in the floor of the great ceremonial cave, a big natural cavity a hundred and fifty feet above the little trout brook, with

little cave-dwellings dug in its hinder walls, and little cell-rooms of tufa blocks built from floor to roof back of the estufa. This we have been able to restore of the identical materials as it was a thousand years ago; even to the fibers used in the roof. And a few stout long ladders, plus occasional toe-holds in the cliff, make this uncommonly interesting and beautiful shrine accessible to almost any one. The ceremonial uses of the estufa and its sacred and significant fittings would make a very interesting chapter, but there is not room for it here; nor to tell the meanings of the grotesquely tall and tapering spars of the ladders by which alone, and through an opening in the roof, an estufa was entered. Indeed, there is no other opening whatever, except the sacred conventional "flue" for the passage of the spirits.

On the west side of the great Valles Range whose eastern skirts we have been exploring, the topography is far wilder and more inhospitable, the cañons deeper and more savage, and the remains of an ancient "civilization" quite different superficially, though of course of the same culture-stage. This region also is a vast, high plateau, nobly wooded with pines and junipers, no less volcanic in all characteristics than the eastern slope, but the product of different phases of volcanic activity. The stupendous tufa blankets of the eastern slope are entirely lacking; the whole

country is lava and trap and basalt, save where erosion has burrowed down to the lower limestones. The lava cap is of great area, and ten to fifty feet in thickness; and of course a surface like that changes very little under the weathering of eons. It must have taken millenniums before soil enough appeared to support the pines; and except where the high-power water-courses, boring with the thrust of a stiff gradient, have cut out cañons —probably cracked at the outset by earthquakes —the face of that wild solitude has doubtless changed almost nothing in a hundred thousand years.

A prehistoric foot-trail leads from the Rito and from the Pu-yé over through a pass of the Valles Range to the interesting cañon of the Jemez "River"—a shallow brawling stream twenty feet wide in normal water, though capable of great floods when the snows of the Sierra let down their tremendous bulk. This cañon is one of the most interesting in New Mexico, less for its rugged scenery, though it is two thousand feet deep and of striking cliffs, than for its geological and historic distinction. In the very wildest part of the gorge, and almost beside the rushing trout-brook, the most important sulphur springs in the whole Southwest boil up. They have been for innumerable centuries a blessing to man; for the Indian in his most primitive days

and before Civilization had brought him the diseases of infamy, patronized the healing hot springs. From the earliest Spanish occupation of the Territory, in 1605, the Jemez hot springs have been a pilgrimage to the Mexicans; and now daily stages carry visitors from all parts of the world over this sandy sixty miles up-hill from Albuquerque. The present Indian pueblo of Jemez is a few miles down-stream from the springs; and half a mile up the river from the "Ojos" are still the ruins of the original pueblo, the famous Giú-se-wa. It has an ideal location—as those old pueblos invariably had—for security and for beauty of outlook. The prehistoric First American knew and appreciated a "good view" as well as our most esthetic globe-trotter, and never failed to choose one.

Writing in 1625, Fray Alonso de Benavides, head of the Franciscan missionaries in New Mexico, told of the handsome churches already built there by his order by 1617. I have one of the seven extant copies of his little book, the most precious early document we have on New Mexico; and edited a translation of it, with notes by F. W. Hodge, of which three hundred copies were printed by Mr. E. E. Ayer. It has a facsimile of the priceless original. Among these seventeen churches was "an uncommonly handsome one at Jemez." And three hundred years later we can

testify to his truthfulness and good judgment; for the mighty walls of this old temple at Giú-se-wa are still standing almost to the level of the ceiling-beams—awesome walls, eight feet thick, built of unchiseled slabs of sandstone, whose outer face was undoubtedly rubbed on other sandstones to flatten it, and with adobe mud for mortar, with a face smooth as a modern brick wall; its rich brownish color shining beautifully amid the green cottonwoods, and reflecting the hues of the near-by cliffs from which its stones were chipped.[1] And I made the startling discovery there in the ruined tower, that those remarkable old Franciscan builders had wrought the first caracol stairway in this country, if not in America. It was merely the rude and rudimentary device with which all spiral staircases first began, and which has its highest expression in the Caracol Tower which I constructed in the Southwest Museum in Los Angeles—the only one of its kind in the world, a wonderful "twist" like a gigantic rifle two feet in caliber between the balusters and 125 feet from top to bottom, and with rooms around its spiral. But the Franciscan *frailes* did not have my concrete to deal with; and their spiral stair was merely beam-ends inset, in ascending series, around the massive wall.

A mile or so still further up-stream is the pic-

[1] See ill., p. 436.

© Photo by Quimu and Chas. F. Lummis

THE 500-FOOT SODA DAM, JEMEZ CAÑON

turesque and remarkable "Soda Dam," whose name indicates its character. It is a great mound, five hundred feet long and thirty feet high, and forty to sixty feet thick, thrown obliquely across the stream with the infallible engineering of Nature, by the stream itself, adding to the "dam" a particle from its every drop—all heavy with mineral from other hot springs not far above. Doubtless some big pine fell first, millenniums ago, across a narrow gully; and the precipitates piled up on it, and "petrified" around it, growing and growing until the whole passage was closed. Then the stream eddied back, and poured around the dam at the right; and here the building and accretion went on, ever pushing up-stream, and carrying the lip of the cup over which the water must pour, farther and farther back. There must have been at last a very pretty lakelet here, about five hundred feet long by 150 wide, and the "dam" kept getting thicker and thicker from above, and higher as the stream trickled over this greatly lengthened surface. And at last some mischievous little maggot of a stream bored its way down through the dam near its bottom and by some unusual stress of flood (when the water would be vastly less heavy in mineral) broke through this little tunnel and made a cavern through which the stream flows to this day. I am rather fond of this reasonably good photograph of the Jemez

Soda Dam; for I was totally blind when I made it. But I had known the Jemez country for many years; and my twelve-year-old-boy Quimu, who led me during the expeditions of 1911-12, and whose keen eyes and trained shrewdness and devotion made it possible for me to manage a scientific expedition and the excavation of two ruins with a force of Indians, had learned to pool his eyes with my experience on the ground-glass of the big camera. He helped me erect the big tripod on the precipitous hillside, after pacing off the distance from the dam which my memory led me to believe would be right. He helped me get that beautiful picture focused on the ground-glass, describing what was included and indicating its location on the glass to me by moving my finger. And on the ground-glass he himself picked out a spot in the center of focus, and trotted off and climbed on top of the dam and shouted back to me—and I exposed the five-by-eight glass plate.

Above these springs in the cañon the little Rio Jemez is a lovely trout-stream, and so are its tributaries. Clambering with great difficulty up the two-thousand-foot southern cliff to the great lava rim, we are upon another lofty segment of the same great plateau, also the haunt in ancient days of numerous communities of the old Pueblos. One important ruin is at the very rim, and a still more important one, whose aboriginal name was

Amoxiumqua, on the western bank of another noble and fearsome cañon, that of the Rio Virgen, fifteen miles further. In this region there were no tufa cliffs to dig into, nor lava shelves to make pigeonhole dwellings in; and the building was all of many-storied terraced houses of broken stone. Nor were there any springs; and the descent to the bottom of the cañon for water was a terrific task. But at this great altitude there is much snow; and in the side cañons, tributary to the Virgen, are frequent *tinajas*—pot-holes in the bed-rock, sometimes of large size, and retaining water fresh for a long period. Probably, also, these people had to go down to the valley not only for their water but to plant their corn—the plateau being too high and cold for crops. In some of the rooms we excavated, we found the neatest and most ingenious arrangement of the little stone corn bins, so carefully plastered with gypsum as to be almost perfect as a receptacle; and the *metates* (mealing-stones) carefully boxed, sloping, in smaller bins so that the flour "scrubbed out" upon them with the *mano* or "hand" (the upper millstone) could be all gathered up. It would be interesting to tell of the habits of these forgotten people, as we can reconstruct them from what they left behind—their clothing, their sandals, their beautiful bowls and water-jars and canteens and cooking-pots, their bows and agate-

tipped arrows, their food, including the birds and animals whose bones they threw out from their cooking, and their methods of burial. These were not always quite "orthodox" in ancient Amoxiumqua; for we uncovered many skeletons buried at full length, and some buried under the kitchen hearth, and some buried under a wall, and not all properly facing toward the east. I say not "orthodox," for the almost universal prehistoric custom of these people was to bury in what we call the "embryonic position"; that is, knees drawn up to the chin and arms around them, and all simulating as well as might be the attitude of the human embryo. For these wild people, in whom of course were the immortal seeds of poetry—and many a flower of it—believed that mankind was born from the womb of the Earth Mother; and that at death we go back to that same holy shelter, and should go back in the same attitude as that in which we came. Of course these, like all primitive peoples, believed in a future life which was simply a glorified edition of this one, with all the sorrow left out, and all the pleasures emphasized. It was four days' journey from this world back to the Yonder; and the dead person was given food for the road, and the medicine-men made incantations about the body to throw evil spirits off its trail. The woman "took" her beloved *tinajas* and cooking-pots and other do-

mestic utensils to resume her housewifely duties and pleasures in the other world. Sometimes these articles were buried with her, in which case of course they went straight through to her destination. But frequently the big lava mealing-stones, and even the larger *tinajas,* were forwarded to her by the simple expedient of "killing" them, at a common killing-place outside the pueblo—the "killing" being done by breaking the object. A *metate* cracked across or a jar with bottom broken, or any article made useless for others in this world, was thereby supposed to become available to the owner in the next. In later centuries, after the heroic Franciscan missionaries had converted the Pueblos and had built great Christian temples among them and brought them to be buried in the consecrated courtyard, the prized personal possessions were still buried with the deceased or broken upon the grave. I have myself seen probably a hundred thousand dollars' worth of the choicest Navajo blankets go underground, swathed about the lifeless clay of their owners; and of course it was always the best blanket that was so consecrated. For an exception, see page 180.

CHAPTER XXXIII

THE STONE AUTOGRAPH-ALBUM

The Most Notable Cliff in America—A Register in the Wilderness for Hero Pioneers Three Centuries Ago

WHEN I was a boy, every boy and girl who had imagination had also an autograph-album. It was a very pretty habit, and a wise one, thus to press a flower from each young friendship. Not that the autographs were always wise—how well I remember the boys who tried to be "funny," the girls who were dolefully sentimental, or who wished "May *Angles* Twine Thy Cross with Flowers!" But those thumbed red morocco books of fifty years ago were worth-while! And if the owner had a little more imagination, he began to seek more famous autographs. I shall never forget the great moments when good gray Longfellow, and cheerful, rheumatic "Mrs Partington," and the "Autocrat of the Breakfast-table" christened my last autograph album with their names, which were for long my chiefest

treasures—until that dearest hero of boyhood, Captain Mayne Reid, eclipsed them all.

That is a great while ago; but I have not got over my fondness for autographs—nor, I find, has the world at large. There are thousands of dealers in autographs; and some signatures fetch very high prices—plain, unrelated signatures, with no direct personal touch to the purchaser. When I was librarian of the Los Angeles Public Library, a dozen years ago, I found a very intense interest, among all classes of people, in a collection of autographs I made for the library, sending out letter-size sheets of heavy paper, with the library imprint, to the foremost statesmen, authors, artists, and other notables; mailing the sheets flat, with a return photo-mailer. The response was extremely generous. Men and women of the highest note wrote poems or sentiments; famous artists gave us beautiful water-colors or black-and-whites. And as the sheets had a wide ruled margin for binding, the result was volumes of unique and universal interest.

A few years ago I got in New Mexico a unique holograph document by Daniel Webster, directly concerning this Wonder Land of the Southwest. The humor of it is the sending of a United States Consul to our own Santa Fé, New Mexico. But it was not ours when Daniel Webster was Secretary of State of the United States.

As it has never been printed before, it is worth quoting here:

United States of America.
Department of State.

To all to whom these presents shall come—Greeting;

Know Ye that the bearer hereof,
Manuel Alvarez, who has been appointed Consul
Of the United States at Santa Fé in the Mexican
Republic, is proceeding thither.

These are therefor to request all whom it may concern to permit him and the persons of his suite to pass freely without let or molestation, and to extend to them all such friendly aid and protection as would in like cases be extended to citizens or subjects of Foreign Countries resorting to the United States in the lawful pursuit of their affairs.

In testimony whereof I, Daniel Webster,
Secretary of State of the United States,
of America have hereunto set my hand
and caused this seal of this Department
to be hereunto affixed at the City of
Washington, this 4th day of March A.D.
1842, and of the Independence of the
United States the sixty sixth.

DANIEL WEBSTER.

Now, I have thousands of them—not "just autographs," but letters meant for me, not as a collector, but as a friend; but they never lose their charm. But no other autographs have ever thrilled me as I thrilled a third of a century ago when first I stood under one of the noblest cliffs

in this country, and read in its great stone page the dagger-writ autographs of some of the first heroes of our American history.

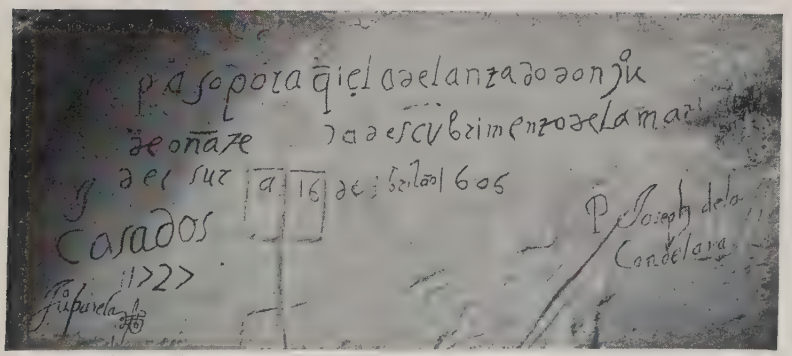
"The Stone Autograph-album," as I named it, lies in a remote corner of western New Mexico. It is about fifty miles southwest of the Santa Fé Railroad from Grants, via the Zuñi Cañon; or from Gallup by way of the little Mormon settlement of Ramah. It is beside an ancient and historic trail from the Rio Grande to the strange pyramid pueblo of Zuñi. This, as you know, is what is left of the famous "Seven Cities of Cibola," whose fabled gold inspired the discovery of New Mexico in 1539, and later the most marvelous marches of exploration made on this continent. Coronado, the great explorer, marched from the Gulf of California almost to where Kansas City now is in 1540-42, besides making other explorations hardly less astounding. And after his day most of the other Spanish world-finders came to Zuñi.

As we move down the valley, guarded on the north by the wilderness of pines of the Continental Divide, and on the south by a long line of those superb mesas of ruddy sandstone which are among the characteristic beauties of the Southwest, we become presently aware of a noble rock which seems to be chief of all its giant brethren. Between two cedar-dotted cañons, a long, wedge-

shaped mesa juts into the valley, terminating in a magnificent cliff which bears striking resemblance to a titanic castle. And so the Spaniards—always apt godfathers—named it "El Morro." Its front soars aloft in a noble tower, and its sides are sheer walls 215 feet high and thousands of feet long, with strange white battlements and wondrous shadowy bastions. Nothing without wings could mount there. But a few hundred yards south of the tower the mesa can be scaled, by a prehistoric trail of separate foot-holes worn deep in the solid rock. At the top, we find that the wedge is hollow—a great V, in fact—for a cañon from behind splits the mesa almost to its apex. Upon the arms of this V are the ruins of two ancient pueblos, which had been abandoned before our history began, facing each other across that wild gulf. These stone "cities" of the prehistoric Americans were over two hundred feet square and four or five stories tall—great terraced human beehives, with several hundred inhabitants each.

This remarkable and noble rock was known to the Spanish pioneers much more than two centuries before any of our Saxon forefathers penetrated the grim deserts of the Southwest; and even in this land so full of wondrous stone monuments it was so striking that they gave it a name for its very own. They called it El Morro—the

EL MORRO—"INSCRIPTION ROCK"



Photos by Chas. F. Lummis

OÑATE'S INSCRIPTION ON HIS MARCH BACK FROM "THE SOUTH SEA," IN 1605

Castle—and for more than three hundred years it has borne that appropriate title, though the few hundred "Americans" who have seen it know it better as Inscription Rock. It is the most precious cliff, historically, possessed by any nation on earth, and for generations was, I am ashamed to say, the most utterly uncared-for and abused.

Lying on the ancient road from Zuñi to the river—and about thirty miles from the former—it became a most important landmark. The necessities of the wilderness made it a camping-place for all who passed, since the weak spring (or water-hole, for modern excavation does not verify the spring Lieut. Simpson records there) under the shadow of that great rock was the first water in a hard day's march. There was also plenty of wood near, and a fair shelter under the overhanging precipices. So it was that every traveler who came to the Morro in those grim centuries behind us stopped there—and that included nearly every notable figure among the first heroes who trod what is now our soil. And when they stopped, something else happened—something which occurred nowhere else in the United States, so far as we know. The sandstone of the cliff was fine and very smooth; and when the supper of jerked meat and popcorn-meal porridge had been eaten, and the quilt-mailed sentries put out to

withstand the prowling Apache, the heroes wrote their autographs upon a vast perpendicular page of stone, with their daggers for pens!

You must not imagine that this came from the idle-mindedness which gives ground for our modern rime about "fools' names, like their faces." These old Spaniards were as little of the braggart as any set of heroes that ever lived. It was not for notoriety that they wrote in that wonderful autograph-album, not in vanity, nor idly. They were piercing an unknown and frightful wilderness, in which no civilized being dwelt—a wilderness which remained until our own times the most dangerous area in America. They were few—never was their army more than two hundred men, and seldom was it a tenth of that—amid tens of thousands of warlike savages. The chances were ten to one that they would never get back to the world—even to the half-savage world of Mexico, which they had just conquered and were Christianizing. No! What they wrote was rather like leaving a headstone for unknown graves; a word to say, if any should ever follow, "Here were the men who did not come back." It was a good-by like the "Cæsar, we, who are to die, salute you."

Coronado, the first explorer, did not pass Inscription Rock but took the southern trail from Zuñi to the wondrous cliff-city of Acoma. But,

among those who came after him, the road by El Morro soon became the accepted thoroughfare from Old to New Mexico; and in its mouse-colored cliffs we can read to-day many of the names that were great in the early history of America. Such queer, long names some of them are, and in such a strange hand-writing! If any collector had some of those real autographs on paper, they would be worth a small fortune. But, as it is, you shall have the photographic facsimiles which I made specially, and with great difficulty. You would hardly imagine how much is involved in photographing these inscriptions. For one thing, you have to be an expert in old Spanish. Twenty years later F. W. Hodge (then of the Bureau of Ethnology) made "squeezes" with stereotyper's paper, getting perfect reproductions of these inscriptions.

On the southeast wall of the Morro are some very handsome autographs, and some very important ones. The pioneers who passed in the winter generally camped under this cliff to get the sun's warmth; while those who came in summer sought the shade of the north side. All the old inscriptions are in Spanish—and many in very quaint old Spanish, of the days when spelling was a most elastic thing, and with such remarkable abbreviations as our own forefathers used as many centuries ago. All around these brave old names,

which are so precious to the historian—and to all who admire heroism—are Saxon names of the last few decades. Alas! some of these late-comers have been vandals, and have even erased the names of ancient heroes to make a smooth place for their "John Jones" and "George Smith." That seems to me an even more wicked and wanton thing than the chipping of historic statues for relics; and I do not, anyhow, envy the man who could write his petty name in that sacred roster.

Near the tall, lone sentinel pine which stands by the south wall of El Morro is a modest inscription of great interest and value. It is protected from the weather by a little brow of rock, and its straggling letters are legible still, though in 1922 they have been there for 317 years! It is the autograph of that brave soldier and wise first governor in the United States, Juan de Oñate. He was the real founder of New Mexico, since he established its government and built its first two towns. In 1598 he founded San Gabriel de los Españoles, which is the next oldest town in our country. St. Augustine, Florida, is the oldest, having been founded in 1565, also by a Spaniard. Next comes San Gabriel, and third Santa Fé, which Oñate founded in 1605. But before there was a Santa Fé he had made a march even more wonderful than the one which brought him to

New Mexico. In 1604 he trudged, at the head of thirty men, across the fearful trackless desert from San Gabriel to the Gulf of California and back again! And on the return from that marvelous "journey to discover the South Sea" (the Pacific) he camped at El Morro and wrote in its eternal page. Here it is, just as he wrote it two years before our Saxon forefathers had built a hut in America, even on the sea-coast—while he was fifteen hundred miles from the ocean. The inscriptions are nearly all of such antique lettering, and so full of abbreviations, that I shall give you the Spanish text in type with an interlined translation, so that you may pick out the queerly written words and get an idea of sixteenth and seventeenth century "short-hand." Oñate's legend reads:

"Pasó por aqui el Adelantado[1]
Passed by here the Commander
don Juan de Oñate del
Don Juan de Oñate from the
descubrimento de la mar
discovery of the sea
del Sur a 16 de Abril
of the South on the 16th of April,
Ao 1605"
year 1605.

[1] We have no exact word for *adelantado*. He was the officer in command of a new country.

A curious shadow in the cliff makes the last figure of Oñate's inscription look in the photograph precisely like a 6; but in fact the inscription is a 5, and is correct—for this wonderful march was in 1604-1605. Oñate left San Gabriel (the first little town he founded in New Mexico, 1598) October 7, 1604; arrived at the head of the Gulf of California January 23, 1605; and was back at San Gabriel April 25, 1605—nine days after writing on the Stone Autograph Album. His "army" on this marvelous march consisted of two Franciscan missionaries and thirty soldiers. On the way he visited Zuñi and the Moqui Pueblos.

This is the oldest identified autograph on the Rock except one, which is not absolutely certain—that of Pedro Romero; his date reads apparently 17580. Either some one has foolishly added the naught—which is most improbable—or the 1 is simply an *i*, and the supposed 7 an old-fashioned 1. This is very likely. "And"—*y* or *i*, in Spanish—was often written before the year; and this inscription undoubtedly means, "Pedro Romero and 1580." In that case, Romero was one of the eight companions with whom Francisco Sanchez Chamuscado made his very remarkable march of exploration in that year.

Just below Oñate's autograph is one which some careless explorers have made eighty years earlier than his. The second figure in the date

does look like a 5; but no white man had ever seen any part of New Mexico in 1526; and the figure is really an old-style 7. The autograph is that of Basconzelos (Figure 2), and reads:

Por Aqui pazó el Alferes
By here passed the Ensign
Dⁿ Joseph de Payba Basconzelos
Don Joseph de Payba Basconzelos
El año que trujo el Cavildo
the year that he brought the town-council
del Reyno á su costa
of the Kingdom (N.M) at his own expense.
á 18 de Febo. de 1726 años
on the 18th of Feb., of 1726 years.
(Common Spanish idiom for "in the year 1726")

Not far away is the pretty autograph of Diego de Vargas—that dashing but generous general who reconquered New Mexico after the fearful Pueblo Indian rebellion of 1680. In that rebellion twenty-one gentle missionaries and four hundred other Spaniards were massacred by the Indians in one day, and the survivors were driven back into Old Mexico. This inscription was written when Vargas made his first dash back into New Mexico—a prelude to the years of terrific fighting of the Reconquest. He wrote:

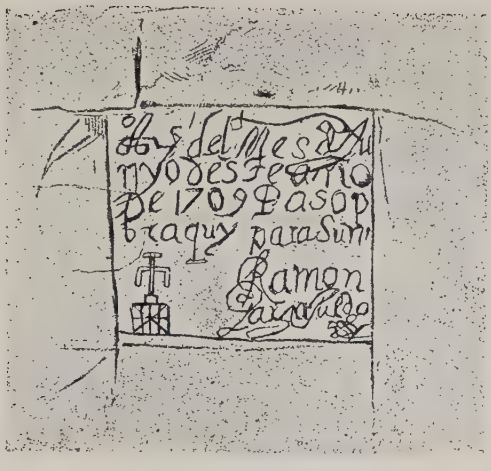
"Aqui estaba el Genˡ. Dn. Do. de Vargas, quien
Here was the General Don Diego de Vargas, who
conquistó á nuestra Santa Fé y á la Real Corona

conquered for our Holy Faith and for the Royal Crown
todo el Nuevo Mexico á su costa, año de 1692.''
(of Spain) all the New Mexico, at his own expense
(in the) year of 1692.

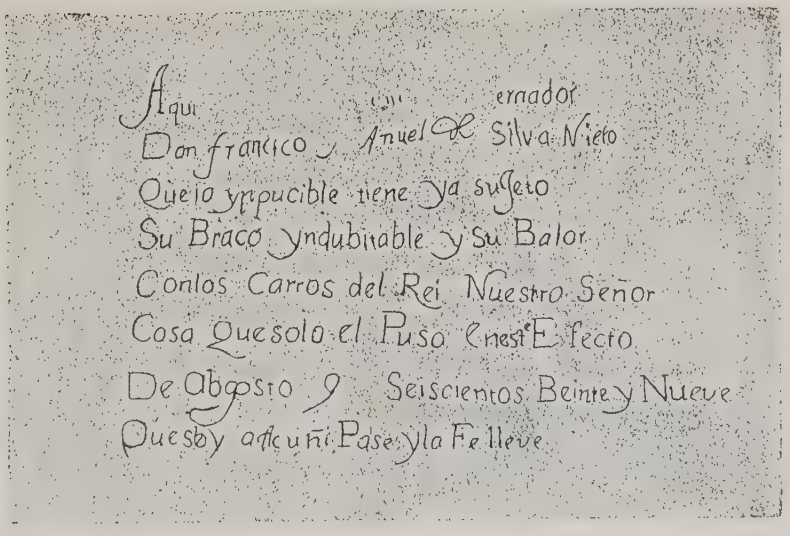
A little north of Vargas's valuable inscription is that (Figure 3) of the expedition sent by Governor Francisco Martinez de Baeza to arrange the troubles in Zuñi, on the urgent request of the chief missionary Fray Cristobal de Quirós. It reads:

''Pasamos por aqui el sargento mayor, y el
We pass by here, the lieutenant-colonel, and the Cap-
capitan Jua. de Arechuleta, y el aiudante Diego
tain Juan de Arechuleta, and the lieutenant Diego Mar-
Martin Barba, y el Alferes Agostyn de Ynojos,
tin Barba, and the Ensign Agustin de Ynojos, in the
año de 1636.''
year of 1636.

Below this are some ancient Indian pictographs. The *sargento mayor* (literally "chief sergeant") who is not named was probably brave Francisco Gomez. The inscription is in the handwriting of Diego Martin Barba, who was the official secretary of Governor Baeza. In a little cavity near by is the inscription of "Juan Garsya, 1636." He was a member of the same expedition. The handsome autograph of Ynojos appears in several places on the rock.



RAMON PAEZ HURTADO



SILVA NIETO'S SECOND ENTRY

Two quaint lines, in tiny but well-preserved letters, recall a pathetic story. It is that of a poor common soldier, who did not write his year. But history supplies that.

"Soy de mano de Felipe de Arellano á 16
I am from the hand of Felipe de Arellano, on the
de Setiembre, soldado."
16th of September, soldier.

He was one of the Spanish "garrison" of *three men* left to guard far-off Zuñi, and slain by the Indians in the year 1700. Not far away is the autograph of the leader of the "force" of six men who went in 1701 from Santa Fé to Zuñi (itself a desert march of three hundred miles) to avenge that massacre, the Captain Juan de Urribarri. He left merely his name.

An autograph nearly obliterated is that of which we can still read only:

"Pasó por aqui Fran°. de An . . . Alma . . ."

This was Francisco de Anaia Almazan, a minor but heroic officer who served successively under Governor Otermin, the great soldier Cruzate, and the reconqueror Vargas, and was in nearly every action of the long, red years of the Pueblo Rebellion. At the time of the great massacre in 1680, he was in the pueblo of Santa Clara. His three companions were butchered by the savages, and Almazan escaped alone by swimming the Rio Grande. He probably wrote in the album of the

Morro in 1692, at the same time with De Vargas. Another autograph of a member of the same expedition is that of Diego Lucero de Godoy (Figure 4). He was then a *sargento mayor,* a very good and brave officer, who was with Governor Otermin in the bloody siege of Santa Fé by the Indians, and in that dire retreat when the bleeding Spaniards hewed their way through the swarming beleaguers and fought a passage to El Paso. He was also in nearly every battle of the Reconquest. Salvador Holguin, whose autograph is also on the rock, was another of Vargas' soldiers. Of about the same time were several Naranjos, of whom Joseph was the first *alcalde mayor* (about equivalent to district judge) of Zuñi after the Reconquest. Of a much earlier date was the unknown soldier, "Juan Gonzales, 1629" (Figure 5). A subsequent Gonzales passed and wrote here seventy-one years later, in a very peculiar "fist":

"Pasé por aquy el año 1700 yo, Ph. Gonzales."
I passed by here (in) the year 1700, I, Felipe Gonzales.

A *firma* as peculiar as that of our own famous "puzzler," General Spinner, is appended to the entry (Figure 6):

"A 5 del mes de Junyo deste año de
On the 5th of the month of June of this year of
1709 pasó por aquy para Zuñi Ramon Paez

1709 passed by here, bound for Zuñi, Ramon Paez *Jurt'do.*"
Hurtado.

Another Hurtado wrote on the other wall, in queer little square characters:

"*El dia 14 de Julio de 1736 pasó por aqui el*
(On) the day 14th of July of 1736 passed by here the
Gen^{l} *Juan Paez Hurtado, Visitador—y en su*
General Juan Paez Hurtado, Official Inspector, and in
compañia el cabo Joseph Truxillo."
his company the corporal Joseph Truxillo.

This one was a son of the *great* General Hurtado—the bosom friend of Vargas, repeatedly lieutenant-governor of the territory, and in 1704 acting governor. He was afterward greatly persecuted by Governors Cubero and Martinez. The son also was a general, but not so prominent as his father.

On the north side of the Morro are the longest and most elaborate inscriptions, the rock being there more favorable. The earliest of them are the two long legends of the then governor of New Mexico, Don Francisco Manuel de Silva Nieto. They were not written by him, but by some admiring officer in his little force. A part has been effaced by the modern vandal, but enough remains to mark that very notable journey. The first says (Figure 7):

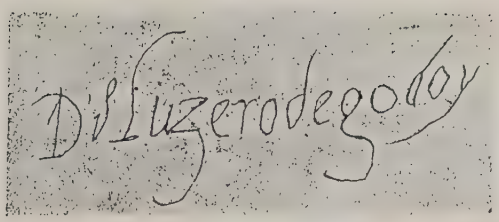
"*Aqui . . .* [*pasó el Gober*] *nador Don Fran-*

Here passed the Governor Don Francisco Manuel de
cico Manuel de Silva Nieto que lo ynpucible tiene
Silva Nieto that the impossible has already ef-
ya sujeto su Braco yndubitable y su Balor, con
fected (by) his arm indomitable and his valor, with the
los Carros del Rei Nuestro Señor; cosa que solo
wagons of the King Our Master; a thing which only he
el Puso en este Efecto, de Abgosto 9, Seiscientos
put in this shape on August 9, (one thousand) six hun-
Biente y Neuve, que . . . á Cuñi Pasé y la Fé
dred, twenty and nine, that to Zuñi I passed and
llevé.''
the Faith carried.

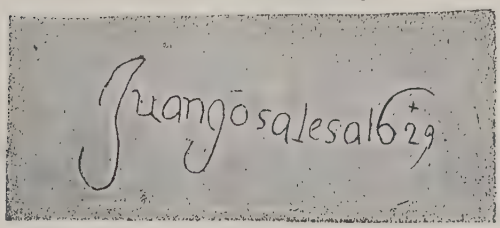
What is meant by Governor Nieto's "carrying the faith" (that is, Christianity) is that on this expedition he took along the heroic priests who established the mission of Zuñi, and who labored alone amid that savage flock.

Nieto's other inscription (Figure 8), written on another journey, is in a more characteristic handwriting. It says:

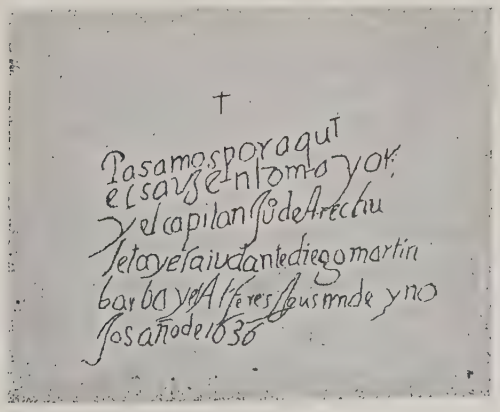
"El Illustrisimo Señor y Cap. gen. de las
The most Illustrious Sir and Captain-General of the
pros. del nuebo Mexco. Por el Rey nro. Sr.
provinces of the New Mexico for the King Our Master,
Pasó por aqui de buelta de los pueblos de Zuñi
passed by here on the return from the villages of Zuñi
á los 29 de Julio del año de 1629; y los
on the 29th of July of the year of 1629 and them (the



Diego Luzero de Godoy



Juan Gonzales, 1629


Pasamos por aquí
el sargento mayor
y el capitan Juº de Arechu
leta y era ayudante diego martín
barba y Alferes Agustín de y no
jos año de 1636

Juan de Arechuleta, Diego Martín Barba and Agostyn de Ynojos

puso en paz á su pendimto., pidiendole su fabor
Indians) he put in peace at their request, (they) ask-
como basallos de su mag^d. Y de nuebo dieron
ing his favor as vassals of His Majesty. And anew they
la obediencia; todo lo que hiso con el agasaxe,
gave obedience; all of which he did with persuasiveness,
selo, y prudencia, como tan christianisimo . . .
zeal, and prudence, like such a most Christian,
tam particular y gallardo soldado de inacabable
such a careful and gallant soldier of tireless
and memory . . ."

Another long inscription, not so handsomely written but very characteristic, is that of Governor Martinez, near by:

"Año de 1716 á los 26 de Agosto pasó
(In the) year of 1716 on the 26th of August, passed
por aqui Don Feliz Martinez, Govern^r. y Cap^n.
by here Don Feliz Martinez, Governor and Captain-
Gen^l. de este Reyno, á la reduczion y conq^ta.
General of this Kingdom, to the reduction and conquest
de Moqui; y en su compañia el Rdo. P.
of Moqui; and in his company the Reverend Father
F. Antonio Camargo, Custodio y Juez Ecle-
Fray Antonio Camargo, Custodio and Judge-Eccle-
siastico."
siastic.

This was an expedition to reclaim to Christianity the lofty cliff-built pueblos of Moqui, which had slain their missionaries; but it signally

failed, and Martinez was recalled in disgrace from his governorship. He and Pedro Rodriguez Cubero were the worst governors New Mexico ever had after 1680, and no one was sorry for him. The *Custodio* was the local head of the Church in New Mexico, directing the missionary priests and others. A curious flourish at the end of his autograph is the *rubrica* much affected by writers of the past centuries. There are many characteristic *rubricas* among the names on the Morro.

The first visit of a bishop to the Southwest is recorded in a very clear inscription, which runs:

"Dia 28 de Sept. de 1737 años
(On the) day 28th of September of 1737 years,
llegó aqui el Illmo. Sr. Dr. Dn. Mrn.
reached here the most illustrious Sir Doctor Don Mar-
De Elizaecochea, Obpo. de Durango, y el
tin de Elizaecochea, Bishop of Durango, and (on) the
dia 29 pasó á Zuñi."
day 29th went on to Zuñi.

New Mexico belonged to the bishopric of Durango (Mexico) until 1852. A companion autograph is that of the "Bachiller" (Bachelor of Arts) Don Ygnacio de Arrasain. He was with the bishop on this journey—an arduous and dangerous journey, even a century later than 1737.

The first Archbishop of New Mexico, J. B. Lamy (for whom Lamy Junction is named) left his name and title here, 1863.

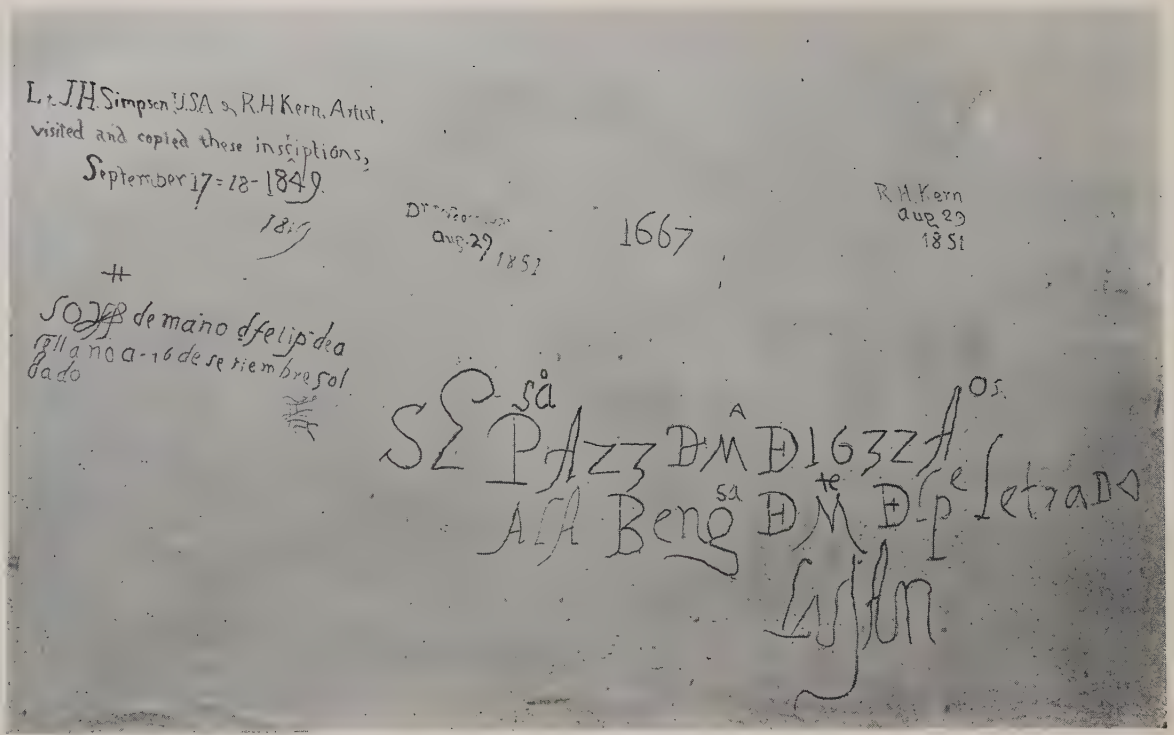


Photo by Chas. F. Lummis, 1892

THE FAMOUS "LUJAN INSCRIPTION"

Lieutenant Simpson's entry close by

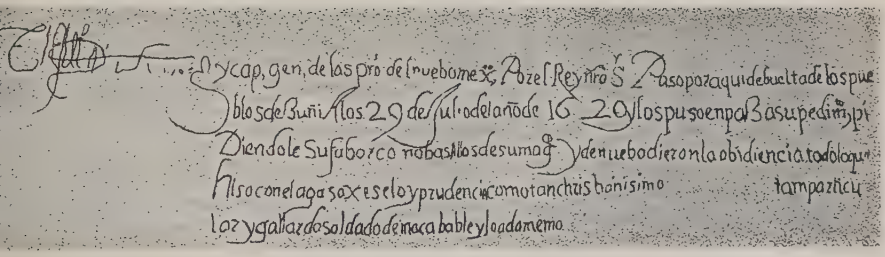
One of the most puzzling inscriptions in this precious autograph album, and a very important one, is that of the soldier Lujan. It is almost in hieroglyphics, and was never deciphered until I worried it out with a greater student of ancient writings; though after we solved the riddle it is clear enough to any one who knows Spanish. Its violent abbreviations, the curious capitals with the small final letters piled "overhead," and its reference to a matter of history of which few Americans ever heard, combined to keep it long a mystery. Reduced to long-hand Spanish, it reads:

"*Se pasaron á 23 de Marzo de 1632 años á*
They passed on the 23d of March of 1632 years to
la benganza de Muerte del Padre Letrado.
the avenging of the death of the Father Letrado.
Lujan."

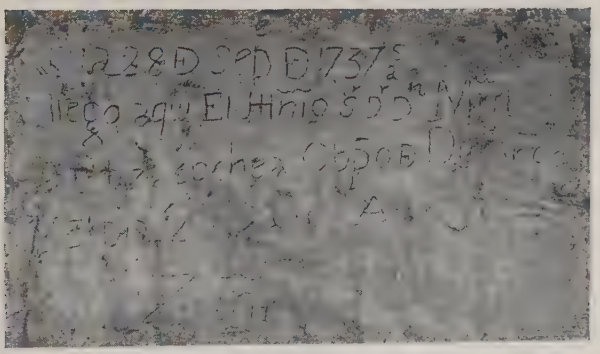
What a romance and what a tragedy are hidden in those two lines! Father Francisco Letrado was the first permanent missionary to the strange pyramid-pueblo of Zuñi. He came to New Mexico about 1628, and was first a missionary to the Jumanos—the tattooed savages who lived in the edge of the great plains, east of the Rio Grande. In 1629, you will remember, the mission of Zuñi was founded, and he was sent to that lone, far parish and to his death. He labored earnestly with his savage flock, but not for long. In Febru-

ary, 1630, they mercilessly slew him. Francisco de la Mora Ceballos was then governor of New Mexico, and he sent this expedition "to avenge Father Letrado's death," under the lead of the *Maestro de Campo* (Colonel) Tomas de Albizú. Albizú performed his mission successfully and without bloodshed. The *Z*uñis had retreated to the top of their thousand-foot cliff, the To-yo-ál-la-na, but were induced to return peaceably to their pueblos. Lujan was a soldier of the expedition.

But even here there falls a ray of humor. You will notice that within a few inches of the Lujan Inscription—in fact so close as to come into the same five-by-eight negative with it—Lieutenant (later General) J. H. Simpson, U. S. A., and his artist, R. H. Kern, recorded their visit and their copying the inscriptions September 17-18, 1849. (For comparison, the Lujan inscription is forty-two inches long.) Another entry by Kern, two years later, is also seen. Lieutenant Simpson's report to the secretary of war concerning his "Reconnaissance into the Navajo Country" is a paper of great value to the student. Unfortunately he knew little if any Spanish, almost nothing of the earlier explorers, and nothing whatever of Spanish writing and cryptography of the seventeenth and eighteenth centuries. Neither did Artist Kern. They could not determine the



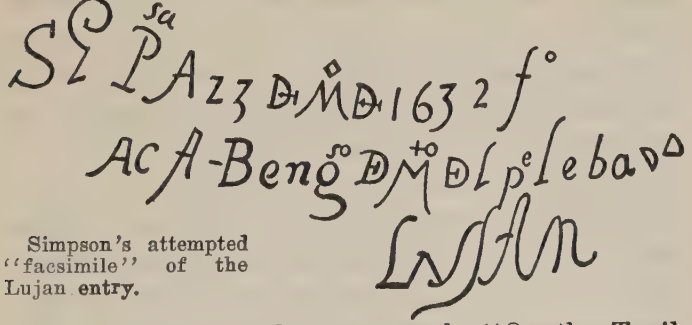
SILVA NIETO'S FIRST ENTRY



THE FIRST BISHOP IN NEW MEXICO

Don Martín de Elizacochea

dim or fragmentary letters, and the result of their laborious and faithful effort to make "facsimiles" of these inscriptions was in most cases entirely worthless and unintelligible. Even Oñate's history-making march is lost by these decipherers, who read his inscription "Passed by this place with dispatch, (a word or two not decipherable) 16th day of April 1606"—missing entirely the vital "Adelantado don Juan Oñate al Descubrimento de la Mar del Sur." Chief Justice Houghton of the Territory of New Mexico, the Official Translator Samuel Ellison, and the noted Donaciano Vijil, Secretary of the Territory, were kind enough to "conjoin in a literal rendering of these inscriptions into English." The collaboration produced the most extraordinary assortment of blunders ever recorded in a like case.



Simpson's attempted "facsimile" of the Lujan entry.

In his great posthumous work, "On the Trail of a Spanish Pioneer; the Diary and Itinerary of Francisco Garcés in his travels through Sonora,

Arizona and California, 1775-1776," the lamented Dr. Elliott Coues deals at some length with this "Lujan Inscription," and with characteristic chuckles. He reproduces the Simpson "facsimile" and my photograph, and says: "This is a sort of cipher to which Lieut. Simpson had no clew, and he missed it altogether in translating, on page 124 of the book, as follows: 'Country of Mexico, in the year 1632, folio (some characters not intelligible) Bengoso, by order of Father Liebado Lugan'!! This is enough to remind us of the famous 'Bill Stumps, his mark,' in Dickens's Pickwick. Simpson got 'country of Mexico' by mistaking the P A 23 for the word Pais, and the D m for 'de Mexico'; then the apparent fo for folio, it being Ao for Año; then he was stumped; then he took M t e for Mandado (ordered), and finished with the misprint of the Padre's name as a part of the name of the person who inscribed the legend! . . . The cipher was explained by Chas. F. Lummis, who calls it 'Lujan of 1632' in his 'Strange Corners.' "

A certain fatality, as it were, seems to dog the attempts of persons ignorant of Spanish to "facsimile" these cryptic inscriptions. So late as 1920, Geo. Wharton James comes to grief with them, in a chapter on El Morro not really improved in process of its whole-hearted plagiary from the 1892 edition of this my book of the "Strange Cor-

ners." He does not fare so badly as Lieut. Simpson, of course, for he appropriates my translations bodily and without credit; and has the guidance of my photographs. But even so, his line "facsimiles," though plausible to the eye, are enough distorted and bungled to be absolutely unreliable and without historic worth—a quality which seems, like the proverbial wooden leg, to "run in the family."

There are a great many other old Spanish autographs on the sheer walls of the Morro; but these are the principal ones so far deciphered. Of the American names only two or three are of any note at all. The earliest date from 1849, and are those of Lieutenant Simpson and his artist companion Kern—doubtless the first of us to visit the spot. All the other Saxon names are very recent and very unimportant.

And at last tardy retribution has overtaken them, and the hand of Science is erasing these impudent names, even as their owners sometimes scrubbed off the entry of a hero to make room for that of a fool. The Stone Autograph Album has been made "El Morro National Monument," with an Amherst man for custodian. It has been fenced, with a locked gate; a railing along the foot of the cliff lets visitors close enough to read the inscriptions, but not to do any autographing of their own; and cactus planted below the rail

discourages any crawling under. Mr. Vogt has placed in water-proof frames by each historic inscription my transliteration and translation; and has supervised the sandstoning-out of intrusive names. It is comforting that after three-quarters of a century of neglect and vandalism the most interesting and important "Inscription Rock" in the world is at last safeguarded. More comforting still, to a fit patriotic spirit, that El Morro is but one of many among the treasures of our American Lands of Wonder at last recognized, honored, and protected by the Government of these United States. There will be something left for pride and wonder when Americans at last awaken in general to know that we really have wonders to be proud of.

APPENDIX

AUTHORITIES ON THE SOUTHWEST

FIRST, a word *in memoriam:*

Every American owes a lasting debt to the memory of Major John F. Lacey, long Congressman from Iowa, and father of many "Lacey bills" for the conservation of American antiquities. It is chiefly due to his enlightened and unflagging labors that Dr. Hewett and the rest of us were able to secure the creation of many "National Monuments" and other reservations to protect the wonders of the Southwest from vandalism. The safeguarding of "Gran Quivira"; the Rito de los Frijoles, now the Bandelier National Monument; Inscription Rock, now El Morro National Monument; the Petrified Forest National Monument; and many other similar protected areas—as well as many "Shelters" and "Refuges" for wild animals and birds—is due to this fine American.

Our accurate knowledge of the history, archæology, and ethnography of the Southwest stands four-square upon the massive works of Adolph F.

Bandelier, who left no successor nor rival in his field. He was the greatest master of documentary research. His major works are not to be read, but consulted in a reference library—as are most of the other books on the Field. These volumes are:

"Historical Introduction to Studies among the Sedentary Indians of New Mexico," 1883; and "A Report on the Ruins of the Pueblo of Pecos," 1883. These were under the Archæological Institute of America, which subsidized him with sixty dollars a month for two or three years in the field; in return he gave the Institute incomparably the most important contributions to science it ever printed.

"An Outline of the Documentary History of the Zuñi Tribe," Hemenway Expedition, 1892.

"Final Report of Investigations among the Indians of the Southwestern Portion of the United States," 1890, Arch. Inst. Am. This enormous work of over eight hundred pages is our cornerstone. Very useful monographs on "The Romantic School of American Archæology," 1895; "The Montezuma of the Pueblo Indians," 1892.

His "Gilded Man," 1893, printed while he was in South America with me, and without his proofreading, has also chapters on the Cities of Cibola, Coronado, the New Mexico Pueblos, the Age of Santa Fé, and Jean L' Archeveque.

But his great popular contribution, giving an absolute photograph of prehistoric Pueblo life (in the Rito), was printed in 1890, and after a few years began to command forty and fifty dollars. A new and better edition, illustrated from my photos, came out 1916 (Dodd, Mead & Company).

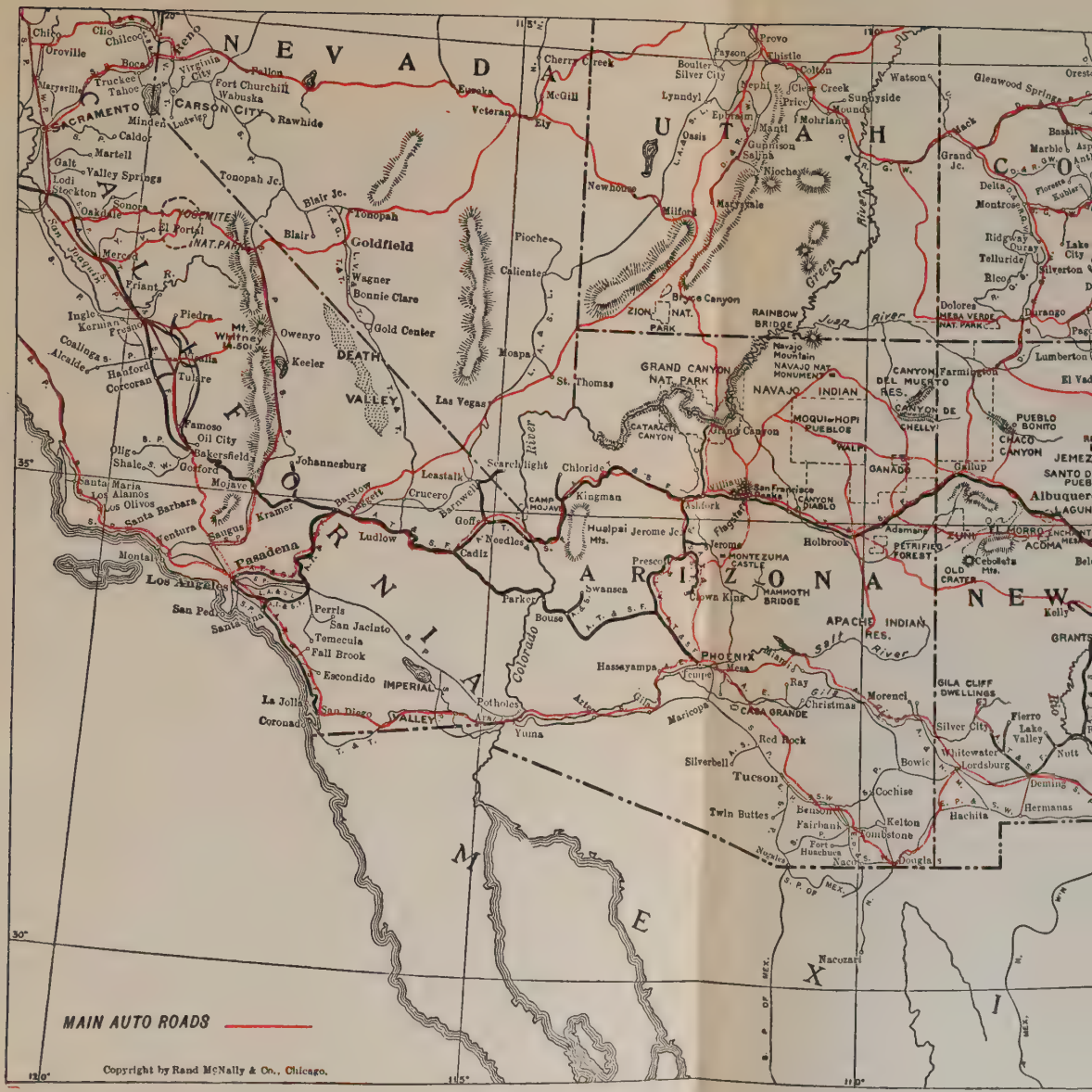
Bandelier was most generous always, and gave high credit for our insight into the tribal organizations of Zuñi (and therefore of most of the Southwestern Indians), to that strange genius Frank Hamilton Cushing, whom I labeled "the most extraordinary Ethnological Detective in the history of Science." His sensational work among the Zuñis forty years ago roused more popular interest than anything else in our scientific history; for he not only discovered fundamental and essential facts in the esoteric Indian life, unguessed before, but wove it all into a very dream of romance. The same intuitive and imaginative genius which enabled him to creep inside the Indians' heart and learn vital secrets was not balanced with the judicial temper; and it required men like Bandelier, Hodge, and others to relate Cushing's discoveries to their proper place. When Mrs. Hemenway financed a big expedition for him, the end soon came. But no one had any business to expect him to be a business manager; and we have every reason to feel gentle and very

grateful toward this ill-fated Poet in Science. Many of his works are contained in Bureau of Ethnology reports. His most popular books are "Zuñi Creation Myths," 1896.

"Zuñi Folk Tales, Recorded and Translated by F. H. Cushing," 474 pages, 1901.

He also made a marvelous address before the Board of Indian Commissioners in 1897 on "The Necessity of Studying the Indian in Order to Teach Him."

The most learned and competent of all editors of Western Americana is F. W. Hodge, who has modestly given many years to shaping up the work of others. But his masterpiece is the "Handbook of American Indians," a huge dictionary in two volumes of 979 and 1221 pages, 1907-10. Many important papers during his editorship of his "American Anthropologist" include "First Discovery of the Cities of Cibola," 1895; "Prehistoric Irrigation in Arizona," 1893; "Pueblo Indian Clans," 1896; "Pueblo Snake Ceremonials," 1896; "Early Navajos and Apaches," 1896; "The Enchanted Mesa" in many magazines in 1897, including the "Century" and the "American Anthropologist." He is now with the Heye Foundation, Museum of the American Indian, New York; and for many years he has been doing important work in excavation at Hawiku, one of the "Seven Cities of Cibola."


NEVADA
UTAH
COLORADO
CALIFORNIA
ARIZONA
NEW MEXICO
SACRAMENTO
CARSON CITY
Reno
Oroville
Chico
Clio
Chilcoot
Truckee
Tahoe
Virginia City
Fallon
Fort Churchill
Wabuska
Minden
Ludwig
Rawhide
Caldor
Martell
Galt
Valley Springs
Lodi
Stockton
Oakdale
Sonora
YOSEMITE NAT. PARK
El Portal
Merced
Friant
Tonopah Jc.
Blair Jct.
Tonopah
Blair
Goldfield
Wagner
Bonnie Clare
Gold Center
Owenyo
Keeler
Mt. Whitney 14,501 ft.
DEATH VALLEY
Las Vegas
Moapa
St. Thomas
Piedra
Ingle
Kerman
Fresno
Coalinga
Alcalde
Hanford
Corcoran
Tulare
Famoso
Oil City
Bakersfield
Oildale
Shale
Gosford
Johannesburg
Mojave
Santa Maria
Los Alamos
Los Olivos
Santa Barbara
Ventura
Saugus
Kramer
Barstow
Daggett
Crucero
Leastalk
Searchlight
Chloride
Kingman
Goffs
Needles
Ludlow
Cadiz
Parker
Swansea
Bouse
Pasadena
Montalvo
Los Angeles
San Pedro
Santa Ana
Perris
San Jacinto
Temecula
Fall Brook
Escondido
IMPERIAL VALLEY
La Jolla
San Diego
Coronado
Potholes
Yuma
Cherry Creek
McGill
Ely
Eureka
Veteran
Pioche
Caliente
Newhouse
Milford
Boulder
Silver City
Provo
Thistle
Payson
Colton
Lyndyl
Nephi
Clear Creek
Sunnyside
Price
Mounds
Mohrland
Watson
Oasis
Ephraim
Manti
Gunnison
Salina
Nioche
Marysvale
Green River
Glenwood Springs
Grand Jct.
Delta
Montrose
Ridgway
Ouray
Telluride
Rico
Silverton
Lake City
Durango
Dolores
MESA VERDE NAT. PARK
Bryce Canyon
ZION NAT. PARK
RAINBOW BRIDGE
Navajo Mountain
NAVAJO NAT. MONUMENT
GRAND CANYON NAT. PARK
Grand Canyon
CATARACT CANYON
NAVAJO INDIAN
CANYON DEL MUERTO RES.
CANYON DE CHELLY
MOQUI-HOPI PUEBLOS
WALPI
GANADO
Gallup
Farmington
Lumberton
El Vado
PUEBLO BONITO
CHACO CANYON
JEMEZ
SANTO D
PUEB
Albuquer
LAGUN
Williams
San Francisco Peaks
CANYON DIABLO
Ashfork
Flagstaff
Jerome Jct.
Hualpai Mts.
Jerome
MONTEZUMA CASTLE
Holbrook
Adamana
PETRIFIED FOREST
ZUNI
EL MORRO
INCHO
ACOMA
Cebolleta Mts.
OLD CRATER
Prescott
Crown King
MAMMOTH
BRIDGE
APACHE INDIAN RES.
Salt River
PHOENIX
Mesa
Tempe
Hassayampa
Gila
Ray
Christmas
Morenci
GILA CLIFF DWELLINGS
CASA GRANDE
Maricopa
Red Rock
Silverbell
Tucson
Twin Buttes
Benson
Fairbank
Tombstone
Fort Huachuca
Nogales
Nacozari
Cochise
Bowie
Silver City
Fierro
Lake Valley
Whitewater
Lordsburg
Nutt
Deming
Hermanas
Hachita
Kelton
Douglas
Colorado River
Virgin River
Little Colorado River
Gila River
Salt River
MAIN AUTO ROADS
Copyright by Rand McNally & Co., Chicago.

APPENDIX

Of early New Mexico, there are two books of supreme rarity and value:

"Historia de la Nueva Mexico," Capitan Gaspar de Villagrá, Alcala, Spain, 1610. This squatty little 12mo has thirty-four heroic Virgilian cantos about the Conquest by Oñate; and much about Acoma, of which Villagrá (or Villagran) was the chief hero. It has 605 pages and his portrait.

The other "Ancient" is Benavides's "Memorial," etc., 1630, but largely written along 1625. It has only one hundred pages, worth about ten dollars a page; but is obtainable in some reference libraries in the limited edition translated by Mrs. Edward E. Ayer, revised and edited by me and with annotations by F. W. Hodge and myself; and with about fifty photogravures, showing all the important points mentioned by Benavides. It is our most important document; though some reports of the earliest expeditions had value.

The vital narrative of the great Discoverer and Explorer of the whole Southwest, from the City of Mexico over to the West Coast of Mexico, up to Great Bend, Kansas, Francisco Vazquez de Coronado, is made accessible through the scholarly translation of George Parker Winship, accompanying the original text of Castañeda. Here we have the first account of the Grand Cañon, Zuñi (which heroic Fray Marcos de Niza first saw

from afar), Acoma, the Rio Grande and its great pueblos—as well as those of Moqui. The route of this great explorer in this tremendous march has been absolutely settled by Bandelier and clinched by Hodge. The earlier narrative of Cabeza de Vaca has been similarly set; with full proof that that remarkable Spaniard in his seven-year wanderings never saw New Mexico or Arizona.

For the history of the Southwest:

"Arizona and New Mexico," H. H. Bancroft, 1889—by far the best of his thirty-nine huge unindexed volumes; and showing the critical touch of Bandelier.

"Leading Facts of New Mexican History," Colonel Ralph E. Twitchell, Santa Fé, 5 vol., 1911 to 1917. Has a great mass of important new documentary and other material.

"Illustrated History of New Mexico" (English and Spanish editions), Benj. M. Reed.

Herbert E. Bolton has built up, at the University of California, a vital department of Spanish-American history, and is doing highly important work.

The publications of the Museum of the American Indian, Heye Foundation, are of a value guaranteed by the editorship of Frederick Webb Hodge, formerly Chief of the Bureau of Ethnology.

The lamented Dr. Washington Matthews remains our foremost authority on the Navajo tribe, the largest in the United States. His "Night Chant" and other works are in the Bureau publications.

"Hand Book of Aboriginal American Antiquities," William H. Holmes, is the most important general survey of this enormous field; and Dr. Holmes's works on Indian Art and many other phases of their life are the last word; while Otis T. Mason of the National Museum is the authority on Indian basketry, and his publications are crowned by the sumptuous two-volume work "Indian Basketry: Studies in a Textile Art without Machinery," 1904.

Of the actual Frontier days of the romantic American traffic to Santa Fé (then in Mexico), the classic is Gregg's "Commerce of the Prairies," 1845.

"Spanish Institutions of the Southwest," Frank W. Blackmar, 1891, is the standard still in its line.

One of the best of the engineer exploration reports is that of William H. Emory: "Notes of Travel in California . . . including Parts of the Arkansas, Del Norte and Gila Rivers," 1849. The first book of importance in its theme, and still good, is: "Land of the Cliff-Dwellers," F. H. Chapin, 1892.

"Through Our Unknown Southwest," Agnes C. Laut, 1913. Clever and pictorial, though it adds nothing to knowledge.

For the Overland Romance:

"Seventy Years on the Frontier," Alexander Majors, 1893. Founder of the Pony Express and the Overland Stage.

"The Overland Stage to California," Frank A. Root, 1901. A messenger in charge of express and mails.

New Mexico and Its People:

My own books on the Southwest have held out for many years, and have not yet been dislodged or disputed:

"The Land of Poco Tiempo," Scribner, 1893, 38 illustrations, 310 pages.

"A Tramp Across the Continent," Scribner, 1890, recounting my walk in 1884.

"Pueblo Indian Folk Stories," Century, 1893.

"Some Strange Corners of Our Country," Century, 1892, now supplanted by the present volume.

"The Spanish Pioneers," McClurg, 1893; drawing a general picture of the Spanish Conquest of the Americas; and with chapters on the romantic missionarying in New Mexico and the building of huge stone churches.

A modest book on the "History and Traditions of Acoma and Laguna," is by John M. Gunn, long resident at the latter pueblo.

My edition of Benavides (see p. 489). Three books of Southwestern Stories—"A New Mexico David," and "The King of the Broncos," Scribner, and "The Enchanted Burro," McClurg.

How We Have Treated the Indians:

"A Century of Dishonor," by Helen Hunt Jackson, Harper, 1881; an indictment, drawn from our own government records, and never yet disputed.

"Massacres of the Mountains," by J. P. Dunn, Jr., Harper, 1886, 785 pages.

Official account of the "Battle" of Wounded Knee, by James Mooney, of the Bureau of Ethnology, contained in the Bureau's Fourteenth Report, in monograph, "The Ghost Dance Religion."

Speeches of Congressman M. Clyde Kelley, in January, 1923, on the intolerable abuses of our Indian Bureau.

Exhaustive papers on the prehistoric and present Pueblos, their architecture, customs, pottery, and stone implements, are contained in many volumes of the Bureau reports—notably those by William H. Holmes, head of the National Museum; Cosmos and Victor Mindeleff (prehistoric), J. Walter Fewkes (on Moqui), W. J. M'Gee, and many others.

On the Grand Cañon of course the master is Major John Wesley Powell, whose report has

appeared in several shapes. A generous boy who went with him on the second trip, F. S. Dellenbaugh, has written a friendly and much-illustrated book, unfortunate in its historical chapters: "The Romance of the Colorado River," 1902.

On the Desert, John C. Van Dyke wrote, in that name, the most beautiful, poetic and artistic "Studies in Natural Appearance," 1901. It has not, however, anything of the human romance.

For the Desert, also, the first crossing of the Grand Cañon and so on, "On the Trail of a Spanish Pioneer," by Dr. Elliot Coues, edited by Hodge, is a perfect treasure-house of information about the desert and its tribes in the year of our Independence.

On Death Valley:

"Death Valley in '49," William L. Manley, 1894: one of the survivors.

"Death Valley," by John R. Spears, 1892.

The Sign Language:

"Indian Sign Language," by W. P. Clark, 1885 —the standard.

"Sign Talk," by Ernest Thompson Seton, 1918, with over seven hundred diagram illustrations of the signs. The most useful handbook.

Of the vivid but fast-disappearing Romance of the Cowboy, the Open Range, and the Long Trail —the once vast cattle industry of the Southwest— incomparably the best descriptions are by Emer-

son Hough, and in fiction by Eugene Manlove Rhodes.

There are many omissions from this list of books on the Southwest. They are intentional. Why name books I could not advise you to read?

MOQUI AND "HOPI"

For over 300 years the Moquis and their villages have been known to history by that name. It is not what they call themselves—nor do we call Apaches, Navajos, Pueblos, Turks, Italians, Frenchmen, Russians, by the names they call themselves, but by those everyone else calls them. To this day, more than 50 Indian tribes know of the Moqui—not one knows of the "Hopi." The Moquis do not know *themselves* as "Hopi"—which is merely like "pea" for "peace." Their name is Ho-pi-tuh Shi-nu-mu, "People of Peace."

In the Nineties, a young man who had pursued cephalopods about Boston, came to study Moqui. In his first smatter of the language—but innocent of Spanish and of history—he came upon this aboriginal name, misunderstood it, mangled it, and reported that "Hopi" was the "correct name"—much of a muchness with those who call Los Angeles "Loss," and San Bernardino "Berdoo." Somehow, "the sentry slept," and it crept into the Bureau of Ethnology. Thence the railroad accepted it, and uninformed writers have broadcast it. But it has never become any less ignorant, impudent and blundering; and History and Science will come into their own. There are indications even now that the Smithsonian Institution is preparing to purge itself of this absurdity.

HOW TO GET THERE

Skeleton Itinerary to the Wonders of the Southwest

I HAVE not meant to make a Guide Book to the Southwest; simply to tell of its wonders. Routes, guides and accommodations may change. But it is very simple for the traveler, by rail or automobile, to arrange an itinerary to any of the points I mention.

No weaned person will infer from this book that New Mexico and Arizona are "Just Indians, Deserts, Mexicans and Ruins." There are several smart little "American" cities and towns—of course the smarter and the more "American" they are, the less interesting to traveler, student and artist. They are lovable and livable, some of them, but they have no part in our survey of the Southwest Wonder Land. Santa Fé, the historic capital of New Mexico, still has character and picturesqueness —and a strong, intelligent minority determined to keep it so, despite the unimaginative standardizers, those Beasts of the Field of Thought who would Modernize it out of all semblance of Romance, and leave it attractive only to drummers.

By a strange chance—certainly not by premeditation of its builders, though the route doubtless became known to them through its historic romance—practically every wonder of the Southwest is reached by or

from one, and only one, transcontinental railway. The Southern Pacific, indeed, traverses the lower hem of the "Great American Desert" in the United States, and has, near Tucson, the noble ruin of the Jesuit Mission of San Xavier del Bac. It has the massive ruins of the prehistoric Casa Grande; and it has the Imperial Valley, with the "River Overhead." The Denver and Rio Grande gives access to the marvelous Cliff-dweller ruins of Southern Colorado, like those of the Mesa Verde. But practically every one of the notable things described in this book is tributary to that great transcontinental line officially the Atchison, Topeka and Santa Fé Railway, but commonly and logically known as "the Santa Fé Route." From any of its important offices can be secured all necessary information for visiting any of these points. The two-color map shows location of wonders mentioned; and the rail and automobile roads.

The venerable City of Santa Fé, founded 1606, is the first important base for travelers from the East; and trips, excursions, or expeditions can be arranged there for the most of the points of visitation in the eastern half of New Mexico, as well as into Colorado and Utah. From Santa Fé, within a radius of 50 miles, one can visit the notable cave and cliff-dwellings of the Puyé, Shufinné, Rito de los Frijoles, Tsankawi, Otowi, and Tschirege; the inhabited Indian pueblos of Nambé, Tesuque and Pojoaque, near town, the more important ones of Santa Clara, San Ildefonso, San Juan, Cochití (with the stone Mountain Lions and the Cueva Pintada), Santo Domingo and San Felipe; the prehistoric Tur-

quoise Mine, and modern coal mines at Cerrillos; the noble ruin of the 1617 church at Pecos, whose pueblo was the largest aboriginal population in the United States in 1540; Apache Cañon and its battlefield of Glorieta where in 1862 Col. Manuel Chaves and his Mexicans turned back the Confederate forces which had come up to split off the West from the Union. On the upper Pecos is a glorious pine-parked trout country. South from Cerrillos are Golden and the Old Placers, where the first gold in the United States was mined, 1826. The historic Mexican town of Chimayó, famous for its blankets, is on the road to Taos. Within this radius, about, are 4 peaks over 13,000 feet in altitude, seven of 12,000, and a score of 10,000. Longer trips from Santa Fé reach the northernmost of the Pueblo "Cities," Taos, one of the most picturesque spots in America. The nearby town of Fernandez de Taos was the home and burial place of Kit Carson; and now has a notable artist colony. It was a Penitente stronghold.

The "Cities that were Forgotten"—Abó, Cuarai and Tabirá (the Gran Quivira), out on the Salt Plains, can be reached from Santa Fé, down the east side of the range, or via Albuquerque, Belen and Mountainair from the west. These ruins of great stone churches built by the Franciscans in 1629, and abandoned on account of Apache attacks in 1674, are monumental. One is shown in the illustration "A Castle on the Rhine?"

From Albuquerque, auto stages run to the noble Jemez Cañon, with its Indian pueblo, its famous Hot Springs, the notable Soda Dam, and the great ruins of

Giu-se-wa (see illus). Many other ruins are in this vicinity. From Albuquerque it is but 13 miles to Isleta, second of the pueblos in population, and the only one except Ácoma that occupies the same site it did in 1540 when Coronado found it. Scores of prehistoric ruins bead the valley of the Rio Grande as far south as Socorro.

Ácoma and the Enchanted Mesa are sometimes reached from Albuquerque, or even from Santa Fé; but it is better to make arrangements at Laguna. Cubero, San Mateo and other haunts of the Penitentes can also be reached from Laguna or from Grants. Between these two stations is the lower end of the 57-mile "River of Stone" which heads in a great crater at Agua Fria, in the Zuñi Mountains. There are fine prehistoric ruins at Cebollita, beside this lava flow.

Gallup, near the western boundary of New Mexico, is the preferable point of departure for Zuñi, Inscription Rock, the Moqui (or Hopi) villages, the Navajo country and Cañon de Chelly, Cañon del Muerto, Chaco Cañon, Pueblo Bonito, Navajo Mountain, the Rainbow Natural Bridge, etc.

The Petrified Forests are reached from Adamana (preferably) or Holbrook. From the latter, also, the White Mountain Apache country, and Fort Apache.

From Winslow, the White Mountain Apache Reservation, Cañon Diablo and the Meteorite Crater.

From Flagstaff trips can be made to the small-house Cliff Dwellings in Walnut Cañon, eight miles away; to Sunset Mountain and its notable lava flows; to the Grand Cañon by conveyance to the head of the old

Hance Trail; and even to the Painted Desert and the Moqui villages. Also, down to Beaver Creek, Montezuma's Well and Castle, and the smaller ruins in the region of old Fort Verde; and the Mammoth Natural Bridge on Pine Creek. These may also be reached via Ashfork and Prescott. From Flagstaff, also, one may climb the 13,000 foot San Francisco Peaks, and explore their notable lava-flows.

Williams is the usual gateway to the Grand Cañon, being junction point for the 60-mile Santa Fé branch railroad; and through sleepers from east and west come to El Tovar and the other hotels on the Cañon's rim. Arrangements can be made here for exploration up and down the Cañon, and across to the vast virgin forest on the North Rim. There is now a suspension bridge across the river, at the bottom of the gorge.

For a great majority of the region I call the Southwest Wonder Land, the best season to visit is from late May to mid-October. From west of Williams, the other months are less torrid.

At Needles (so called from sharp volcanic crags some miles down the Colorado River) are found degenerate specimens of the Mojave Indians, selling their characteristic bead-work. They are better worth seeing at Fort Mojave, 18 miles up the river.

The Mojave Desert would not be chosen for a summer resort; but I walked its whole width, with a broken arm, in 1884; and to-day thousands of automobiles are constantly crossing it, besides the crowded trains of the Santa Fé. Death Valley is reached from Ludlow, a station on the Santa Fé east of Barstow.

APPENDIX II

THE GEOLOGY OF THE GRAND CAÑON

By Maj. J. W. Powell

DOWN by the river the walls are composed of black gneiss, slates and schists, all greatly implicated and traversed by dikes of granite. Let this formation be called the black gneiss. It is usually about 800 feet in thickness.

Then over the black gneiss are found 800 feet of quartzites, usually in very thin beds of many colors, but exceedingly hard, and ringing under the hammer like phonolite. These beds are dipping and unconformable with the rocks above. While they make but 800 feet of the wall or less, they have a geologic thickness of 12,000 feet. Set up a row of books aslant; it is ten inches from the shelf to the top of the line of books, but there may be three feet of the books measured directly through the leaves. So these quartzites are aslant, and though of great geologic thickness they make but 800 feet of the wall. Your books may have many-colored bindings, and differ greatly in their contents; so these quartzites vary greatly from place to place along the wall, and in many places they entirely disappear. Let us call this formation the variegated quartzite.

Above the quartzites there are 500 feet of sandstones. They are of a greenish hue, but are mottled with spots of brown and black by iron stains. They usually stand in a bold cliff, weathered in alcoves. Let this formation be called the cliff sandstone.

Above the cliff sandstone there are 700 feet of bedded sandstones and limestones, which are massive sometimes and sometimes broken into thin strata. These rocks are often weathered in deep alcoves. Let this formation be called the alcove sandstone.

Over the alcove sandstone there are 1,600 feet of limestone, in many places a beautiful marble, as in Marble Cañon. As it appears along the Grand Cañon it is always stained a brilliant red, for immediately over it there are thin seams of iron, and the storms have painted these limestones with pigments from above. Altogether this is the red-wall group. It is chiefly limestone. Let it be called the red-wall limestone.

Above the red wall there are 800 feet of gray and bright red sandstone, alternating in beds that look like vast ribbons of landscape. Let it be called the banded sandstone.

And over all, at the top of the wall, is the Aubrey limestone, 1,000 feet in thickness. This Aubrey has much gypsum in it, great beds of alabaster that are pure white in enormous beds of chert, agates and cornelians. This limestone is especially remarkable for its pinnacles and towers. Let it be called the tower limestone.

These are the elements with which the walls are con-

structed, from black buttress below to alabaster tower above. All of these elements weather in different forms and are painted in different colors, so that the wall presents a highly complex façade. A wall of homogeneous granite, like that in the Yosemite, is but a naked wall, whether it be 1,000 or 5,000 feet high. Hundreds and thousands of feet mean nothing to the eye when they stand in a meaningless front. A mountain covered by pure snow 10,000 feet high has but little more effect on the imagination than a mountain of snow 1,000 feet high—it is but more of the same thing—but a façade of seven systems of rock has its sublimity multiplied sevenfold.

The erosion represented in the cañons, although vast, is but a small part of the great erosion of the region, for between the cliffs rocks have been carried away far superior in magnitude to those necessary to fill the cañons. Probably there is no portion of the whole region from which there have not been more than a thousand feet degraded, and there are districts from which more than 30,000 feet of rock have been carried away. Altogether there is a district of country more than 200,000 square miles in extent, from which, on the average, more than 6,000 feet have been eroded. Consider a rock 200,000 square miles in extent and a mile in thickness, against which the clouds have hurled their storms, and beat it into sands, and the rills have carried the sands into the creeks, and the creeks have carried them into the rivers, and the Colorado has carried them into the sea.

THE GRAND CAÑON

Some Notable Words About It

"A NEW WORLD"—THOS. MORAN

THOMAS MORAN, whose master paintings of the Yellowstone and the Grand Cañon hang in the National Capitol at Washington, is no provincial. He knows Europe as he knows America; and he strikes to the heart of things when he says:

"It has often occurred to me as a curious and anomalous fact, that American artists are prone to seek the subjects for their art in foreign lands, to the almost entire exclusion of their own. . . .

"That there is a nationalism in art needs no proof. It is bred from a knowledge of and sympathy with their surroundings, and no foreigner can imbue himself with the spirit of a country not his own. Therefore he should paint his own land.

"The English have painted England as nobody but an Englishman could. The same can be said of the French, the Dutch, the Spanish, and so on.

"Our countrymen seem to ignore this fact. They go abroad to study and return laden with the foreign idea, and unthinkingly settle down to imitating as near as they can the subjects, style and method of their masters. Instead of seeking their subjects and inspiration in their own land and applying their technical skill in the production of works national in character, they seem to devote themselves to imitations of foreign masters, and many even find it necessary to make occasional

trips abroad to lay in a fresh stock of ideas for imitation.

"Before America can pretend to a position in the world of art it will have to prove it through a characteristic nationality in its art, and our artists can only do this by painting their own country, making use of all the technical skill and knowledge they may have acquired in the schools of Europe and the study of the art of the past.

"I have been led to these reflections through my familiarity with the scenery of our own unrivaled country from the Atlantic to the Pacific Ocean. There is no phase of landscape in which we are not richer, more varied and interesting than any country in the world. . . .

"This Grand Cañon of Arizona, and all the country surrounding it, offers a new and comparatively untrodden field for pictorial interpretation, and only awaits the men of original thoughts and ideas to prove to their countrymen that we possess a land of beauty and grandeur with which no other can compare. The pastoral painter, the painter of picturesque genre, the imaginative and dramatic landscapist are here offered all that can delight the eye, or stir the imagination and emotions . . . Its tremendous architecture fills one with wonder and admiration, and its color, forms and atmosphere are so ravishingly beautiful, that, however well traveled one may be, a new world is opened to him when he gazes into the Grand Cañon of Arizona."

"THE TITAN OF CHASMS"—C. A. HIGGINS

Few have written of the Grand Cañon with such intimate affection and understanding as the well-loved C. A. Higgins. Up to his untimely death in 1900, he had been for about a decade in charge of the advertising department of the Santa Fé system, and had done much to make known to the world this chiefest wonder. It was he who first gave it the good name "Titan of Chasms." He conducted very many famous painters, authors and travelers to the Cañon; and wrote of it, much and well. To quote a few paragraphs:

"*As Seen from the Rim.*—Stolid indeed is he who can front the awful scene and view its unearthly splendor of color and form without quaking knee or tremulous breath. An inferno, swathed in soft celestial fires; a whole chaotic under-world, just emptied of primeval floods and waiting for a new creative word; eluding all sense of perspective or dimension, outstretching the faculty of measurement, overlapping the confines of definite apprehension; a boding, terrible thing, unflinchingly real, yet spectral as a dream. The beholder is at first unimpressed by any detail; he is overwhelmed by the ensemble of a stupendous panorama, a thousand square miles in extent, that lies wholly beneath the eye, as if he stood upon a mountain peak instead of the level brink of a fearful chasm in the plateau whose opposite shore is thirteen miles away. A labyrinth of huge architectural forms, endlessly varied in design, fretted with ornamental devices, fes-

tooned with lace-like webs formed of talus from the upper cliffs and painted with every color known to the palette in pure transparent tones of marvelous delicacy. Never was picture more harmonious, never flower more exquisitely beautiful. It flashes instant communication of all that architecture and painting and music for a thousand years have gropingly striven to express. It is the soul of Michael Angelo and of Beethoven. . . . Not the most fervid pictures of a poet's fancy could transcend the glories then revealed in the depths of the cañon; inky shadows, pale gildings of lofty spires, golden splendors of sun beating full on façades of red and yellow, obscurations of distant peaks by veils of transient shower, glimpses of white towers half drowned in purple haze, suffusions of rosy light blended in reflection from a hundred tinted walls. Caught up to exalted emotional heights the beholder becomes unmindful of fatigue. He mounts on wings. He drives the chariot of the sun. . . . Still, such particulars cannot long hold the attention, for the panorama is the real overmastering charm. It is never twice the same. Although you think you have spelt out every temple and peak and escarpment, as the angle of sunlight changes there begins a ghostly advance of colossal forms from the farther side, and what you had taken to be the ultimate wall is seen to be made up of still other isolated sculptures, revealed now for the first time by silhouetting shadows. The scene incessantly changes, flushing and fading, advancing into crystalline clearness, retiring into slumberous haze.

"Should it chance to have rained heavily in the night,

next morning the cañon is completely filled with fog. As the sun mounts, the curtain of mist suddenly breaks into cloud fleeces, and while you gaze these fleeces rise and dissipate, leaving the cañon bare. At once around the bases of the lowest cliffs white puffs begin to appear, creating a scene of unparalleled beauty as their dazzling cumuli swell and rise and their number multiplies, until once more they overflow the rim, and it is as if you stood on some land's end looking down upon a formless void. Then quickly comes the complete dissipation, and again the marshaling in the depths, the upward advance, the total suffusion and the speedy vanishing, repeated over and over until the warm walls have expelled their saturation."

CLEAR THROUGH THE GRAND CAÑON

Next to Major Powell as a heroic explorer of the Grand Cañon, stands Robert Brewster Stanton, a veteran engineer on the survey of the Atlantic and Pacific Railway (now a part of the Santa Fé system), who became deeply interested in the plan of a railway through the cañons of the Colorado river from Grand Junction in Utah to the Gulf of California. In May, 1889, as chief engineer, he accompanied an expedition organized by Frank M. Brown, President of the proposed railway. They ran down the river in three boats safely, so far as Lee's Ferry;* thence entering the wilds of Marble Cañon. Here they at once encountered frightful rapids, and the second day Mr. Brown and

* Named after John D. Lee, leader of the Mountain Meadow Massacre.

two of the men were lost, leaving the force too small to handle the boats. Undaunted, Stanton started again December 19, 1889, with three fine boats and twelve men. They wore cork life preservers constantly—and were saved by them several times. They came down to Lee's Ferry again safely, and entered Marble Cañon. Here the photographer broke one of his legs, and they had the frightful task of carrying him up the cliffs and forty miles back to Lee's Ferry, before resuming their perilous journey. This is the only party that ever traversed the whole river from Utah to the Gulf of California—which Stanton and his party did in April, 1890. His descriptions of the rapids—of which he found 520 in his course—is the most diagrammatic we have, and gives the best concept of the terrors of the deep-buried river. And he has a feeling for the Cañon rather more vital than some more eloquent writers have shown at their superficial visit:

"After living in it and with it for so many weeks and months," he says, "I lost all thought of the great chasm as being only a huge rock mass, carved into its many intricate forms by ages of erosion. It became to me, what it has ever since remained and what it really is—a living, moving, sentient being!

"The Grand Cañon is not a solitude. It is a living, moving, pulsating being, ever changing in form and color, pinnacles and towers springing into being out of unseen depths. From dark shades of brown and black scarlet flames suddenly flash out and then die away into stretches of orange and purple. How can such a shifting, animated glory be called 'a thing?' It is

a being, and among its upper battlements, its temples, its amphitheaters, its cathedral spires, its arches and its domes, and in the deeper recesses of its inner gorge its spirit, its soul, the very spirit of the living God himself, lives and moves and has its being."

"ITS INEFFABLE BEAUTY"—HARRIET MONROE

"In these warm and glowing purple spaces disembodied spirits must range and soar, souls purged and purified and infinitely daring. I felt keenly sure of mighty presences among the edifices vast in scope and perfect in design that rose from the first foundations of the earth to the lofty level of my jagged rock. Prophets and poets had wandered here before they were born to tell their mighty tales—Isaiah and Aeschylus and Dante, the giants who dared the utmost. Here at last the souls of great architects must find their dreams fulfilled; must recognize the primal inspiration which, after long ages, had achieved Assyrian palaces, the temples and pyramids of Egypt, the fortresses and towered cathedrals of medieval Europe. For the inscrutable Prince of builders had reared these imperishable monuments, evenly terraced upward from the remote abyss, had so cunningly planned them that mortal foot could never climb and enter to disturb the everlasting hush. Of all richest elements they were fashioned—jasper and chalcedony, topaz, beryl and amethyst, fire-hearted opal and pearl; for they caught and held the most delicate colors of a dream and flashed full recognition to the sun. Never on earth could such glory be unveiled—not on level spaces of sea, not on

the cold bare peaks of mountains. This was not earth; for was not heaven itself across there, rising above yonder alabaster marge in opalescent ranks for the principalities and powers? . . .

"From mountain tops one looks across greater distances and sees range after range lifting snowy peaks into the blue. The ocean reaches out into boundless space, and the ebb and flow of its waters have the beauty of rhythmic motion and exquisitely varied color, And in the rush of mighty cataracts are power and splendor and majestic peace. Yet for grandeur appalling and unearthly; for ineffable, impossible beauty, the cañon transcends all these. It is as though to the glory of nature were added the glory of art; as though, to achieve her utmost, the proud young world had commanded architecture to build for her and color to grace the building. The irregular masses of mountains, cast up out of the molten earth in some primeval war of elements, bear no relation to these prodigious symmetrical edifices mounted on abysmal terraces and grouped into spacious harmonies which give form to one's dreams of heaven. The sweetness of green does not last forever, but these mightily varied purples are eternal. All that grows and moves must perish, while these silent immensities endure. Lovely and majestic beyond the cunning of human thought, the mighty monuments rise to the sun as lightly as clouds that pass. And forever glorious and forever immutable, they must rebuke man's pride with a vision of ultimate beauty and fulfill earth's dream of rest after her work is done."

"ON BRIGHT ANGEL TRAIL"—WILLIAM ALLEN WHITE

"One should not say that the cañon is beautiful; it transcends mere beauty and passes into a 'far more exceeding glory.' But the heart of it is color. It is a rhapsody in color—great splashes and bands and daubs of color—blue shadows, deep and dead, tawny, strawberry-tinged layers of granite; all the yellows in the paint-box; greens and gray-greens and pinks and lavenders, with the half-tones floating on the sun wraiths that haunt the air. He who can look at this monster chasm and not feel his soul stirring in uncanny sympathy with its depth is dead, and Gabriel's trumpet will do little for him. . . .

"One who is alive in his heart or in his head may not go down the trail that leads into this great abyss without feeling the stir of emotions that never before have found speech. He is in the presence of big, simple, primordial things that go to the core of human nature, and seeing these things man may not babble of matters frescoed on the surface of life. This limitless scenic wonder moves men to their highest efforts, and painters, looking at it, try to catch the incarnation of the scene, and writers to set it down in words. It seems so plain, so evident—so trite almost, that one should not fail to transcribe it. Yet no one has caught it, no one has described it. No one has ever carried away, in a book or on a canvas, even a true hint of it. The blue-black shadows of the morning, that mark so rudely the angular descent of Bright Angel Creek, facing the trail and across the cañon, the evanescent mist, the glittering white

frosting of the marble-rock band upon the distant rim, the old-rose banner beneath the white, the gray-green of the middle distance, and the somber brown-red frame of shaded rock-masses that make the outlooking doors of the amphitheater in the foreground—this picture seems so obvious that a child might make it. The plays of Shakespeare and the world's masterpieces of painting, sculpture, and music have this same simplicity. The portrayal of any great fundamental passion seems just as easy as the painting of this cañon landscape. But the artists who have put it in mimic form and color have made it complex. And the writers who have tried to tell of it have made mere muddles of words that mean nothing. The cañon's master has not come to it."

"A RHAPSODY"—FITZ-JAMES MC CARTHY

"This Grand Cañon of Arizona is the most stupendous and astounding of all the natural wonders of the earth—and of all earth's natural wonders the latest and the least known.

"It is a geological apocalypse, half mystery and half revelation.

"It is at once the most awful and the most irresistible thing I have ever beheld. It is a paradox of chaos and repose, of gloom and radiance, of immeasurable desolation and enthralling beauty. It is a despair and a joy; a woe and an ecstasy; a requiem and a hallelujah; a world-ruin and a world-glory—everything in antithesis of such titanic sort. . . .

"Between those far-echoing banks, all the phantasmal forms of rock mentioned before, carved by the rushing,

sand-laden waters—towers, domes and columns titanic, based in the abyss, carved from the top downward, through thousands of feet of soft or vitreous sandstones, through thousands more of marbleized limes, through other thousands (or perhaps only hundreds) of adamantine granites. And the massive colors radiating from these rocks as heat radiates, and blending in the silent, lonesome atmosphere of the desert and the abyss into a very miracle of chromatic glory—what an unparalleled spectacle! . . .

"What a thought-compelling scene! What a commentary on time and motion and the patient, resistless will of world-forming nature! A few inches—not many certainly—has this river of the desert by the suave but ceaseless grinding of its waters, lowered its bed in the adamantine granite since that yesterday, four thousand years or more ago, when the Ptolemies were building their pyramid-tombs on the banks of the Nile; and yet a thousand millions of Ptolemy-tombs would not fill ten miles of this abyss! But Time is Nature's servant while man is Time's. . . .

"Here you might lose a hundred Yosemites and never be able to find them again. Here a dozen Niagaras would form but minor details in the stupendous scene. You might scatter the whole mass of the Alps through the 300 miles of this abysmal chasm in Arizona without filling it up—700 miles in total length, but not throughout of such sublimity as here. . . .

"It is not the matchless immensity of it, I think, that overcomes you, but that your senses cannot quite encompass and analyze its unique and elusive quality. This

great impassive thing that frightens you by its appalling immensity, that enthralls your imagination by the magic of its matchless beauty, that bewilders and mystifies your senses by the vague suggestion of fragrance and melody in its gorgeous purples, and by the vast, echoless silences of its Pompeiian reds and yellows, is inexorable and unresponsive to your puny emotions. That is what fills you with a nameless longing, a divine regret. That is what makes you sob unconsciously as you gaze off into the abysmal, chromatic-splendors of the scene. Your soul hungers for a sympathy which the great spectacle is too impassive, too inexorable, to yield. The inexorable always affects us like that in our psychic moods. The generous mind receives always a sensation of diffused pain from any spectacle or any emotion that baffles complete expression, and the divine pathos of this is as undefinable, as inexorable, as resistless as death—and as lovely as the hope of life everlasting."

"DESCRIPTION IMPOSSIBLE"—WILLIAM WINTER

"In coming to this place I had half a wish and half a purpose to write a description of it; but, now that I have seen it, I feel that description of it is, for me, impossible. The hand that wrote the "Hymn to Sunrise in the Vale of Chamouni," might have made a word picture of this wonderful scene, or, better still, might have expressed the emotion it inspires; but that hand is at rest, and no fellow to it exists on earth. One word, however, can be written, and that is a word of urgent counsel to the American traveler not to seek the marvels

of Europe till he has first looked upon this marvel of his native land. . . .

"American pilgrims will cross the ocean, will seek the Alps, will penetrate the wilds of Russian Siberia, will traverse Indian wilds and African deserts, in search of novelty, and yet they will neglect this greatest of novelties, this surpassing wonder of their native land. . . . A pageant of ghastly desolation and yet of frightful vitality, such as neither Dante nor Milton in their most sublime conceptions ever even approached."

"STOP, AMERICANS!"—EDITH SESSIONS TUPPER

"It is the only scenery on the globe that does not disappoint. Suddenly, without any premonition, the earth yawns beneath you! You stand upon the brink of the bottomless pit. Terrible! An indescribable emotion seizes you. You wish to topple forward, to fling yourself into that awful chaotic chasm. You recoil, step back and lift your eyes, and, lo, the gates of paradise seem swinging before you, and through them you see the walls and ramparts and golden streets of a city not made with hands.

"And that is just what the Grand Cañon is—a combination of regions infernal and celestial. I am not going to try to describe it, for before its superhuman majesty, its splendor, its loveliness, words become as sounding brass and as a tinkling cymbal. I wish only to say that as I stood there and looked at it first, flooded with the soft golden and violet lights of sunset, I longed for a trumpet to send forth a clarion call over this vast country and to cry: 'Stop, stop, Americans!

Do not go abroad! Look at your own country first. Come here and see what God has wrought.' "

"BEYOND MAN'S POWER TO SPOIL"—JOHN MUIR

"The view down the gulf of color and over the rim of its wonderful wall, more than any other view I know, leads us to think of our earth as a star with stars swimming in light, every radiant spire pointing the way to the heavens. . . . One's most extravagant expectations are infinitely surpassed, though one expects much from what is said of it. . . . This is the main master furrow of its kind on our continent, incomparably greater and more impressive than any other yet discovered, or likely to be discovered. . . . Surely nowhere else are there illustrations so striking of the natural beauty of desolation and death, so many of Nature's own mountain buildings wasting in glory of high desert air—going to dust. . . . It seems a gigantic statement, for even Nature to make, all in one mighty stone word. Wildness so Godful, cosmic, primeval, bestows a new sense of earth's beauty and size. . . . But the colors, the living, rejoicing colors, chanting, morning and evening, in chorus to heaven! Whose brush or pencil, however lovingly inspired, can give us these? . . . In the supreme flaming glory of sunset the whole cañon is transfigured, as if all the life and light of centuries of sunshine stored up in the rocks was now being poured forth as from one glorious fountain, flooding both earth and sky."